WJEC Geography *Examination* News 2011

Be prepared!

There are no big secrets to success in the examination room. Providing you have revised effectively and are well organised, you should do as well in the exams as your geography ability will allow.

1. Revision:

- Start early
- Ask if there is anything you don't understand
- attend any *extra* lessons offered
- work out a realistic revision timetable
- find a space where you are happy to revise
- make your revision active, don't just read
- follow up a period of effective revision with a reward

2. On the examination days:

- Know your exam timetable well
- Arrive relaxed and on time
- Know your centre and candidate numbers
- Make sure you are fully equipped
- Take two pens, two pencils… it's much easier if the one you're using runs out or breaks.

Know your Units

The 2011 geography examination tests the three WJEC Themes as follows:

Papers One & Two (Year 10 and 11 re-sit)

(Monday 13 June, morning)

Theme 1 – Challenges of Living in a Built Environment

Theme 2 – People and the Natural World Interactions

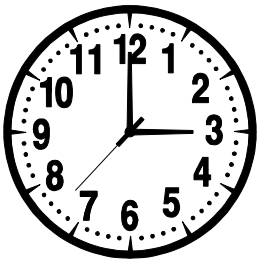
Papers Three & Four

(Friday 17th June, morning)

Theme 3 – People, Work and Development

Problem Solving – Will be linked to themes 1, 2 and 3

Managing your time



There is nothing more upsetting than answering most of the examination paper well and running out of time before you could complete the last question. Each examination will have enough time, but none to waste. Use the following tips to help you finish on time.

Papers One & Two

Each paper is 60 minutes long and has 60 marks, including a choice of Theme 1 Case Study and Theme 2 Case Study. Once you have read through the questions on the paper, you will have a little less than one minute per mark. Your examiners will not expect you to write more. Get straight to the point – don't waffle. Be guided by the marks in brackets as to how many points you need to make.

Look at this answer from a past paper:
What is the difference between 'flows' and 'stores' [1]

"The main difference between stores and flows is that when water is stored it is trapped somewhere, for example it could be stored as it could be stored as water in a reservoir or lake or it could be stored in the sea. When water flows it means that the water is going somewhere, for example it would flow in a river this is stream flow or it can move through the rocks, this is groundwater flow. This is the difference between a flow and a store."

Write your own response to this question. Your target is 15 words.

Papers Three & Four

Each of these papers is 2 hours long, and comes in two sections:

- There are 30 Marks for People Work and Development and this should take 30 minutes of the exam, and this follows the same format as Theme 1 and 2 questions.
- There are 60 marks for the problem solving section and you have 90 minutes to complete this, so there should be less pressure on time.

You will be given advice at the start of each of the sections of the problem solving section, and suggestions as to how long you should spend on it. Make sure that you keep to these times.

The final 'problem-solving' task is in two parts, a table to help you organise your ideas and a final letter or report to write. When completing both, use elaborated statements. They will gain marks.
Remember that a well completed matrix could give you marks at the top of Level Two on both Papers 3 and 4.

Command words

Examination success depends not only upon how well you know your geography but also being able to use this to give the examiners the information they are asking. Examiners help you give the correct information by using 'command words'. Some common commands are below. Give exactly what is asked and you should do well.

Compare: Write what is similar and different between two pieces of information. Use the word 'whereas' to help you compare.

Describe: Just write what you see. You may be asked to describe what you see on a photo, graph or map. Do not explain if you are only asked to describe.

Explain/give reasons: You are now being asked to say *why* something you have already described is happening. Use 'because' to help you answer these questions.
There are often *two marks* awarded for giving just *one reason.* Where this happens you will be expected to give a simple statement and its elaboration. Ask 'so what' to find the elaboration.

Justify: You could be asked to justify a decision you have made. This may happen in the final task on Papers Three & Four. Explain your choices in terms of why they are better than other options open to you.

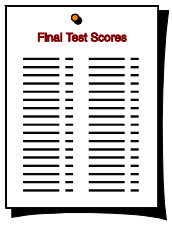
Measure: You may be asked to measure on a map or graph. Don't guess – measure accurately using the scale provided.

Suggest: This is similar to *explain* but tells you that you are expected to bring in ideas and understanding of our own and is not provided on the paper.

What is meant by? You are being asked to give a definition of a geographical term. You must know the main terms for each of the four Units. When asked for a definition, giving an example is not enough.

Test a friend

Each Unit of your geography course has important terms that you need to be able to define. Some of these are shown below. Find a definition for each of these terms and write them on a small piece of card. Write the term on a different card. Ask a friend to match the correct cards. Do this also for other terms you think important.



Theme 1 – Challenges of Living in a built Environment

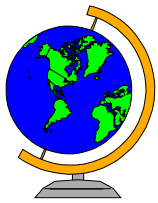
CBD
Commuters
Housing tenure
Inner city
Quality of life
Standard of living
Migrants
National Parks
Services
Squatter settlements
Suburbs
Sustainability
Urbanisation

Theme 2 - People and the Natural World Interactions

Anticyclone
Depression
Ecosystem
Flooding
Precipitation
Weather
Attrition
Corrosion
Discharge
Irrigation
Water cycle
Climate
Drought
Exploitation
Nutrients
Sustainability
Abrasion
Bankfull stage
Deposition
Erosion
Sustainability
Weathering

Theme 3 - People, Work & Development

Employment types
Economic recession
Economic recovery
Infrastructure
Intermediate aid
MNC
Multiplier effect
Quality of life
Standard of living
Sustainability
Multilateral aid
Bilateral Aid
Charity
NGO



The World of Case Studies

The Case Study is the final part of each question you answer on Paper One or Two. You must, therefore, answer two Case Studies from a choice of 4 on this paper. On Paper One the Case Studies are worth a total of 10 marks out of the total of 60. On Paper Two this figure rises to 16 marks. It is therefore, very important that you revise your Case Studies in detail and are able to use them to answer the questions your examiners ask. Read the answer to the Paper Two Case Study below and the comments about it.

Name a place that has had a water shortage.

Africa

Describe how the water shortage affects people and places.

It has affected both crops and animals. They have little water and suffer from malnutrition because of this. This has meant that they have suffered from diseases and died. It has also effected the soil and because of this little will grow. This means people will have no food.

Explain what caused the water shortage.

There was too little rain and rivers were low probably because of global warming. It didn't rain for a long time. People were also using too much water for things like cleaning the car and watering the garden. This had all been going on for a lot of years and there wasn't much water around.

Case Study Mark Scheme

Paper Two – Higher Tier

Level 1: Choice of case study applied reasonably well. Gives simple description or explanation. Information is communicated by brief statements. (1-2 marks)

Level 2: Choice of case study applied well. Gives descriptive points in more detail but little explanation. Communication begins to show structure with occasional use of specialist terms. Sentences show some coherence but occasional errors in spelling, punctuation and grammar. (3-4 marks)

Level 3: Appropriate choice of case study applied well. Provides a balanced account which gives descriptive detailed points with some explanation. Communication has structure with some use of specialist terms. Coherent sentences with few errors in spelling, punctuation and grammar. (5-6 marks)

Level 4: Appropriate choice of case study applied very well. Provides a balanced account which includes specific description and explanation. Communication is logical and contains specialist terms. Spelling punctuation and grammar have considerable accuracy. (7-8 marks)

- This is too broad an area. Which places/areas were exactly affected? Name countries or a physical area like the Sahel.
- What crops and animals were affected? Did the person mean 'malnutrition'? Should it not be drought? What diseases did the plants and animals suffer from? What happened to the soil – erosion or salinisation? Finally, when asked about the effects on people, it is not enough to state that they will have no food.
- Too little rain when? How might global warming have affected the climate patterns? It didn't rain for a long time. So what? The point needs to be developed. What rivers were low? Name them. Countries in Africa are LEDCs. Washing cars and watering gardens seem inappropriate.
- Finally, there is not enough specific detail

Getting the Case Study right needs practice. Write an answer to the Case Study below and mark it using the scheme on the left. Work with a partner to write notes like the ones above to show how you might get your answer into a higher level. Then, practise with more past Case Study questions.

The Case Study: Getting it right

(i) **Name** a place where you have studied a primary or tertiary economic activity. State whether you are writing about a primary or tertiary activity.

(ii) **Draw a labeled sketch map** to show the location of the economic activity.

(iii) **Explain** the **advantages** and **disadvantages** of this location now.

[8]

Problem

There are two parts to papers three and four. The first 30 mark is based on People work and Development and is in the same format as papers one, with compulsory questions and a choice of one from 2 Case Studies. This part should take you 30 minutes to complete.
The rest of the paper is a problem solving exercise - In the early parts of this part of the paper you will be introduced to a place and a problem to be solved. You will then be given a number of possible solutions. Your final task on the paper will be to write what you would do and then justify the decisions you have made. The final task is in two parts:

- A table to help you organise your ideas – The 'Matrix'. When filling in the table, make sure you use elaborated, 'so what' statements. They will help you gain marks and will make it easier to build up your final choice/answer.
- A Letter or report to describe and explain the decisions you have made.

Planning your Report

Your final report or letter is marked using a 'levels' mark scheme. The examiner will look at the quality of your work to decide what level your response is worth. You can help plan your report to help you into higher levels by looking carefully at what the question is asking. By using the question and the Matrix (table) to help you create a writing frame you can make sure that you cover all the areas that the examiner wants. **Remember that you can get marks for the information that you write in to the Matrix**.
Look at the example below based on a past exam paper. Then attempt to create a writing frame for the other question on this page.

Dear Editor

I would like to see Site X as the new housing estate because it offers the best option of the three sites.

The needs of people who will live in the houses will be met by .....

The effects on the future development of Glasgow will be mainly positive because .....

There will be more positive than negative effects on the environment as .....

Although Site Y had some good points, ..., they were more than balanced by .....

In the same way the overall impact of Site Z would be negative as it would ..... and only benefit by .....

In conclusion, therefore, I feel that Site X, although not perfect, best suits the needs of people who will live in the houses, the future development of Glasgow and will have least adverse effects on the environment.

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Write a letter to a local newspaper saying at which of sites X, Y and Z the new houses should be built and explaining why your chosen place is the best of the three. Refer to all three sites in your answer.

Your report should take into account:

- The needs of people who will live in the houses
- Future development of the city of Glasgow
- Effects of the housing development on the environment.

Now it's your turn

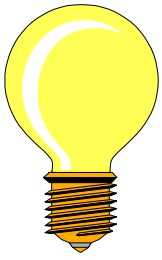
Create your own writing frame for this question:

Write a letter to explain your plan for the sustainable development of an area of rain forest in Madagascar.

You may use any of the developments below:
- eco-tourism
- logging
- subsistence farming by locals and other ideas not mentioned here.

Explain how your plan helps sustainable development of the rain forest and meets the needs of the people of Madagascar.

Explain WHY?



Any Bright Ideas?

If you have any good revision or examination ideas, tell your teachers and ask them to share them with other students in your school.

Good luck in your exams from the Geography Department

Mr Byrne and Miss Perna

Glossary

Asylum seeker A person who applies to live in a new country to avoid persecution in the country they are trying to leave.

Census data The information gained from an official population count.

CBD The Central Business District is the main commercial and shopping area of a city.

Colony A country that has been taken over and ruled by another country.

Community A group of people usually living in the same area who share a common origin, culture or religion.

Commuter Someone who lives some distance from the workplace and who travels daily to and from work.

Comprehensive redevelopment A housing policy which involves the clearing of areas of low-quality buildings and their replacement with a new, higher-quality environment.

Conurbations Large urban areas that are created by the growth and merging of a number of smaller urban areas.

Council housing A type of housing tenure where the houses are owned by local government and are rented to the people who live in them.

Counter-urbanization The process by which an increasing number of people within a country live in the countryside as opposed to towns and cities. This could be the result of natural increase and/or migration.

Economic migrant A person who moves to another place in the hope of gaining a higher standard of living.

Gridlock A situation on the roads where there are so many vehicles that all traffic movement stops.

High order goods Items which are bought infrequently and are often expensive. They are sometimes called comparison goods.

High range Goods or services have a high range when people are prepared to travel long distances to reach them. This usually applies to high order goods.

Honeypot site An attractive place where, because of its popularity, environmental damage may be caused by excessive use.

Housing tenure The conditions under which a household inhabits its home. Common forms of housing tenure include owner occupied, privately rented, and council rented.

Indicators of development Those factors which can be measured to show the degree of development of a country or region.

Infant mortality The number of deaths per 1000 live births of children before their second birthday. Infant mortality is often used as an indicator of development for a country or region.

Industrial Revolution The period of time in a country or region's development when it changes from being mainly a rural agricultural society with small scale 'cottage' industries to one which is based on large scale manufacturing industry in urban areas.

Inner city The zone surrounding the CBD in a city. Although traditionally areas of low quality housing in MEDCs, these are areas of rapid change and development.

Labour intensive Industries which rely on people rather than machines to provide the effort to produce their goods or deliver their services.

Low order goods Items which are bought frequently and which are usually cheap. They are sometimes called convenience goods.

Low range Goods or services have a low range when people are prepared to travel only short distances to reach them. This usually applies to low order goods.

Metropolis A single settlement of outstanding size and importance. It is often the capital city of a country e.g. London, Paris.

Migrants People who move from one place to live in another.

Migration The process of moving from one place to live permanently or semi-permanently in another place.

Neighbourhood The area surrounding a person's home and containing many of the services important to that person. A neighbourhood will have definite boundaries.

Non Government Organizations (NGOs) Groups of people who work with communities in order to improve their quality of life. They are separate from official local and national agencies but sometimes work with them. Most of their work is in LEDCs.

Perception A person's image of an area. Perceptions are often based on second hand information and may be quite different from reality.

Private sector Any industry – primary, secondary or tertiary – that is owned and managed by private individuals or companies.

Public sector Any industry – primary, secondary or tertiary – that is owned and managed by local and national governments.

Quality of life The happiness, well-being and satisfaction of a person. Among the many factors that influence quality of life are the person's family, income and access to services.

Refugees People who move, usually to another country, in order to escape religious or political persecution or other life-threatening situations. Asylum seekers are refugees.

Rural White Paper A government proposal that should provide for sustainable development in the countryside.

Self-sufficient A situation where a person or a community provides all basic needs without having to trade with groups outside that community.

Glossary

Shiv Sena/BJP A grouping of Indian political parties who united to form a government.

Social class A way of distinguishing groups of people in society by some or all of the following indicators – inherited or acquired wealth, education, attitudes, language, behaviour.

Social housing Where access to the type of housing tenure is based upon individual or community needs.

Social segregation The process by which people having different incomes, and coming from different socio-economic groups, become separated and live apart from each other.

Standard of living Those factors which affect a person's quality of life and which can be measured. Many measures of a person's standard of living are to do with possessions.

Suburbs The area found towards the edge of the city and beyond the inner city. In MEDCs the suburbs usually have low density housing and can be divided into the inner and outer suburbs.

Sustainable Capable of being maintained over time for future generations to use or enjoy.

United Nations An organization made up of delegates from almost all countries of the world. The UN headquarters are in New York and it debates issues of global importance, including those related to global development.

Urbanization The process by which an increasing number of people live in towns and cities as opposed to the countryside. This could be the result of natural increase and/or migration.

Urban dereliction The neglect and decay of parts of a town or city.

Urban renewal The process whereby the derelict areas of a town or city are improved by upgrading existing buildings. This process is sometimes known as gentrification.

Urban-rural fringe The areas on the very edge of a town or city where it meets the countryside.

Values and attitudes Values are the feelings and beliefs that people hold. Attitudes are the expressions of those values in the lives and actions of people.

Glossary

Anticyclone A high pressure weather system. Average sea level pressure at the centre of the system is usually above 1000 millibars.

Arctic Brown Earth A soil found in tundra regions. It is about 80cm deep, consisting of sandy soil with pebbles and has a thin dead plant layer at the surface. It rests on permafrost.

Arid Dry desert environments, hot or cold, where there is little, if any, rainfall causing a shortage of water for plants and animals.

Beaufort Scale A scale of wind speed ranging from 0 (Calm) to 12 (Hurricane). A figure of 12 is over 117mph (73kph).

Biodiversity A measure of the number of plants and animals within an ecosystem or biome.

Biomes Large ecosystems at the global scale where the climate and vegetation is uniform.

Biosphere The regions of the Earth and atmosphere where plants and animals live.

Biosphere reserve An ecosystem which is being protected from exploitation by government strategies.

Clean Air Acts Laws passed by national and state governments to control the burning of fossil fuels in homes and by industry.

Climate The average weather conditions over a long period – at least 30 years. Temperature and precipitation are the most often used climate data and are shown on climate graphs.

Cold front The boundary where a cold air mass meets and pushes into a warm air mass. This is usually found in the mid-latitudes of the northern hemisphere as part of a depression.

Continentality Areas away from the sea do not have its cooling influence in summer or its warming influence in winter. Consequently these continental areas have high annual temperature ranges (see Maritime).

Delta A landform, often triangular in shape, that develops where a river meets a slow-moving body of water such as a lake or ocean. Deposition of sediment eventually builds up above the water level forcing the river to split into distributaries to form a delta.

Depression A low-pressure weather system often found in the mid-latitudes of the northern hemisphere where a warm tropical air mass pushes into a cold arctic air mass. Warm air rises to give low pressure at the centre of the weather system. This is usually less than 1000 millibars.

Desert A dry area, hot or cold, where total annual precipitation is less than 250 millimetres. Deserts are usually treeless due to lack of available water.

Ecosystem A system of links between plants and animals (the living community) and the habitats where they live, including the non-living environment.

Electricité de France The state electricity supply company in France.

En famille Together; as a family.

Eutrophication The process whereby an increase in nutrients in a body of water, such as a lake or slow-moving river, causes an increase in algae which use up oxygen. This causes other vegetation and wildlife to die.

First Nations People A term used especially in North America to describe those people who were living in an area before it was colonized by Europeans.

Flows Energy or material moving between stores in a system, e.g. an ecosystem.

Gley A soil which is intermittently waterlogged in its lower horizons.

Gigawatt A measure of capacity of power stations; the larger the gigawatt the greater the output. 1 gigawatt = 1000 million watts.

Heat island The buidling of towns and cities can change local weather by causing a build-up of temperature in and above them. These temperatures are often higher than surrounding countryside and form a heat island.

Hectare A metric measure of area. 1 hectare = 100 x 100 metres = 2.47 acres = approximately two football pitches.

Humus Decomposed organic material from dead plants and animals that forms the top layer or horizon of a soil and gives a brown colour to the soil.

Inorganic Material that has never lived but contributes vital elements to life and the survival of ecosystems e.g. minerals from rocks.

LEDC A Less Economically Developed Country.

Leaching A chemical reaction which results in nutrients in the soil being replaced by hydrogen from rainfall. Nutrients are lost from the soil or moved deeper down the soil profile.

Levée The raised banks of a river usually found in the lower course. They may be formed naturally by regular flooding or be built up by people to protect the area against flooding.

Lichen A group of plants, fungus and algae, which are capable of growing on rocks, tree trunks, roofs and walls. Their roots, and the chemicals they produce, weather the rock surface to produce a thin soil.

MEDC A More Economically Developed Country.

Maritime Areas close to or on the coast have their climate influenced by the sea. Due to differential heating, the sea is cooler than the land in summer and warmer in winter. Consequently maritime climates do not have such large annual temperature ranges as are found in continental climates.

Maximum temperature The highest temperature recorded during a time period. This is usually during a 24-hour period but can be monthly or yearly.

Minimum temperature The lowest temperature recorded during a time period. This is usually during a 24-hour period but can be monthly or yearly.

Glossary

Monsoon Derived from the Arabic word *mawsim* meaning season. It is a seasonal change of wind direction. The monsoon refers to both dry and wet seasons although its common use refers to the wet season only.

Moss Small plants which thrive in open, damp conditions. They often succeed lichen in plant succession.

Nutrients Materials which plants use for food.

Occluded front The area close to the centre of a depression where the more rapidly moving cold front has caught up and undercut the warm front at the surface. Very heavy rainfall is caused as the warm air is forced to rise rapidly.

Organic Material that is living or once formed part of a living plant or animal.

Ozone A combination of three oxygen atoms. Ozone is found in the upper atmosphere and blocks the ultra-violet radiation that increases the risk of skin cancer.

Permafrost Permanently frozen ground that forms part of the tundra biome. Its top layer may melt in the short warm season to allow water to be available for plants and animals at the surface.

Photosynthesis The process whereby plants take in the sun's energy with carbon dioxide and water to produce energy, oxygen and plant tissue.

Plankton Drifting or floating organic life found at various depths in seas, lakes or rivers.

Prevailing wind The direction from which the wind blows into an area for most of the year.

Rattan Climbing plants with thin long stems which can be bent or woven.

Regeneration The process of growing back again; renewal or revival.

Sago A rich, powdered, starchy grain made from the soft centre of the stem of palm trees. It is the staple diet in many parts of the world.

Stewards People entrusted with the management of property, including the environment, to ensure it can be used and enjoyed by future generations.

Stores Energy or matter being kept for some time in one part of a system, e.g. an ecosystem.

Subsistence A means of supporting life by being able to meet one's own basic needs of food, water and shelter.

Sustainable Capable, by careful use and management, of being maintained, used and enjoyed by future generations.

Synoptic chart A map which gives the general view of the weather over a large area for a short period of time.

Taiga The biome that contains the northern coniferous forests of Europe, North America and Asia.

Temperate Areas in the northern and southern hemispheres which do not experience great extremes of heat or cold. They are in the mid-latitudes between the hot tropics and cold polar regions.

Tropopause The upper limit or ceiling of the atmosphere about 12km above the Earth's surface. Rising air meeting the tropopause is forced to move north or south towards the Poles or towards the Equator.

Tundra The biome in Alaska, northern Canada, northern Europe and Asia where the ground is permanently frozen for most of the year. Lichen, moss, grasses and dwarf shrubs and trees can grow here.

United Kingdom The combined name given to the countries of England, Scotland, Wales and Northern Ireland.

Warm front The boundary where a mass of advancing warm air meets a mass of cold air. The lighter, warm air rises over the cold air.

Weather Short-term day-to-day changes in the atmosphere. Weather recording usually includes rainfall, temperature, cloud cover, wind speed and direction.

Weathering The breakdown of rock surfaces into smaller particles by the action of the weather, plants and animals. Weathering takes place in situ or on the spot. It does not involve large-scale removal of material.

Wildwood The original ancient woodland that covered the United Kingdom before human activity began to affect it.

Glossary

Agent of erosion A force responsible for eroding the Earth's surface e.g. wind, water, ice.

Aquifer A rock structure which will hold water. Water can be abstracted from the rock by drilling boreholes.

Arch A natural breach or hole formed by wave erosion on each side of a headland. Two caves usually meet to form the arch.

Arid Dry, desert environments, hot or cold, where there is little, if any, rainfall causing a shortage of water for plants and animals.

Attrition The wearing away of rock fragments as they rub against each other during transportation.

Backwash The movement of water back to the sea after a wave has broken on the shore. The movement is at right angles to the coast.

Bankfull Discharge The discharge at which a river is level with the top of its banks and is about to flood.

Bar A ridge of sand and rock fragments deposited across the mouth of a river entrance or bay.

Blocking anticyclone A high pressure system that remains almost stationary for several days and "blocks" or deflects other weather systems around it.

Capacity The maximum amount volume of water that a river can hold within its channel. It can be increased by widening and/or deepening the river channel.

Capital-intensive Industrial processes where an industry uses a great deal of equipment and few people to produce goods or services.

Cave An opening within a rock. Caves form in headlands where weaker bands of rock are eroded by wave action.

Civil engineering A type of engineering that involves building structures to benefit people e.g. bridges, roads.

Civil war Conflict between people who live in the same country.

Cold front The boundary where cold air mass meets and pushes beneath a warm air mass. This is usually found in the mid-latitudes of the northern hemisphere as part of a depression.

Corrasion (Abrasion) The eroding away of rock surfaces by other pieces of rock being carried by rivers or by the sea.

Deposition The laying down of solid material such as mud or sand on the sea floor and river beds.

Depression A low-pressure weather system often found in the mid-latitudes of the northern hemisphere where a tropical air mass pushes into an artic cold air mass. Warm air rises to give low pressure at the centre of the weather system. Air pressure is usually less than 1000 millibars.

Desalination The extraction of fresh water from sea water.

Differential erosion The uneven erosion of relatively hard and soft rocks often giving a headland and bay coastal scenery or waterfalls along a river.

Distributaries The many channels that a stream or river splits into when it meets a lake or sea and forms a delta.

Economic development The progress made by a country as it develops its economy. Measurable economic indicators such as GDP per head, income per person, are used to assess the economic development of a country.

El Niño The Spanish name given to an occasional reversal in ocean currents in the Pacific Ocean which affects global weather patterns.

Estuary The broad seaward side of a river mouth where there is a mix of fresh water and sea water.

Flood plain A flat area of land on both sides of a river made up of sediment deposited when the river floods.

Food web A diagram that shows the food chains linking plants and animals.

Groyne A low barrier of concrete or wood built out into the sea from the coast. By trapping sand it slows down the movement of longshore drift.

Hydrograph A graph which shows the pattern of a river's discharge. It is measured in cubic metres per second (cumecs) over a period of time.

Hydrosphere This is made up of all the stores and flows of water in gas, liquid or solid state e.g. clouds, rivers, ice.

Hydraulic action (Quarrying) The trapping of air under pressure by water in rivers or the sea. The energy release is explosive and helps erode the rock.

Impermeable These rocks do not allow water to pass through. They are watertight e.g. clay.

Independence When a government has sole responsibility for making decisions about how to run the country it governs.

Infrastructure The structure of communications and services required to support economic development e.g. power supplies, education, health, transport.

Input That which is put in or taken into a system. In the hydrological cycle, precipitation is an input to the drainage basin.

Intermediate technology The use of simple technology, usually small-scale, that can be used and maintained by people after a little training.

Irrigation The artificial supply of water to land by such means as channels, sprinklers, hosepipes.

Glossary

Labour-intensive Industries which rely on people, rather than machines, to provide the effort to produce their goods or deliver their services.

Lagoon A bay or sea inlet that is partly enclosed by a spit or wholly enclosed by a bar.

Lateral erosion The sideways wearing away of rock by a river that widens valleys and causes erosion on the outside of a meander.

Longshore drift The zigzag movement of sediment along a shore caused by waves going up the beach at an oblique angle (wash) and returning at right angles (backwash).

Medieval weirs Small waterfalls made by people in the Medieval period (1066–1485).

Multi-purpose dam A dam built across a river for more than one reason e.g. water supply, HEP.

NGOs Non-Government Organisations which rely on voluntary donations, grants and other fund-raising activity to support the aid provided.

Occluded front The area close to the centre of a depression where the more rapidly moving cold front has caught up and undercut the warm front at the surface. Very heavy rainfall is caused as the warm air is forced to rise rapidly.

Orographic To do with the shape of the Earth's surface (relief).

Output That which is produced by a system or process as an end result. In the hydrological cycle, one output is the river leaving a drainage basin.

Palaeolithic The early Stone Age which lasted from over two million years ago to 30 000 years ago. People lived by hunting and gathering mainly using stone implements.

Parallel faults Cracks in the earth's crust that are roughly parallel. A central block might sink between them to form a rift valley or be pushed up to produce a raised block.

Permeable These rocks allow water to pass through them e.g. chalk, limestone.

Porous These rocks contain many small air spaces e.g. chalk. Most porous rocks are permeable.

Private sector Any industry – primary, secondary or tertiary – that is owned and managed by private individuals or companies.

Rain shadow An area of relatively low rainfall on the sheltered side of an upland.

Sand Rock particles, usually made of quartz, with diameters between 0.06mm and 2mm.

Shingle Large rounded pebbles often forming beach material.

Solution (Corrosion) The dissolving of rock material in water.

Spit A sand ridge that is joined to the coast at one end and juts out into the sea usually with a curve at the other end.

Stack An isolated pillar of rock separated from a headland. Stacks are usually formed by the collapse of an arch.

Sustainable The conservation of an area or resources so that they are available for future generations to use and enjoy.

Swash The advance of sea water up a beach after the breaking of a wave.

Tectonic activity The breaking, bending and moulding of the earth's crust by forces operating within it.

Tidal range The difference in height between high tide and low tide at a particular place.

Vertical erosion The downcutting of a river into the rocks it flows over. Vertical erosion is best seen where lateral (sideways) erosion is slow.

Wadi A dry river valley in a desert region which, immediately following rainfall, has water flowing through it.

Warm front The boundary where a mass of advancing warm air meets a mass of cold air. The lighter warm air rises over the cold air.

WaterAid An NGO created to provide aid for water resources in LEDCs. It is supported by the water companies of England and Wales.

Water (hydrological) cycle The constant recycling of water between the atmosphere and the Earth's surface.

Water deficit This exists where water supply is lower than demand.

Water surplus This exists where water supply is greater than demand.

Water table The level below which the ground is saturated with water. It can vary according to the season.

Weathering This is the breakdown but not the removal of rocks.

World Bank An organization set up by the MEDCs. It contributes funds to be loaned to LEDCs for development projects.

Glossary

Adult literacy The percentage of people over 16 years old in a country or region that can read and write.

Arable The type of farming that involves growing crops.

The Brandt Report A report produced in 1980 that divided the world into More Economically Developed Countries (MEDCs) and Less Economically Developed Countries (LEDCs).

Capitalism An economic system in which the majority of goods and services are owned and managed by individuals and companies rather than by the state.

City state Large urban areas that have their own national government and are not ruled by other countries.

Common Agricultural Policy (CAP) Strategies for the control and development of farming that have been adopted by all member countries of the European Union.

Communism A system of government where most goods and services are owned and managed by the state and little private enterprise is allowed.

Development agencies These are created by the UK government to provide help in the form of grants, loans, ready-built factories and infrastructure to attract investment into areas of economic decline and high unemployment.

Economic recession A period of decline during which some industrial activity closes, people become unemployed and the negative multiplier operates.

Economic recovery A period during which economic activity rises from a period of economic recession, new employment opportunities are created and the positive multiplier operates.

Entrêpot A commercial port whose main function is to provide facilities for import and export and the collection and distribution of goods.

European Economic Community (EEC) A trading group of West European countries set up in 1958 following the success of the ECSC.

European Union (EU) The European Community – EC (formerly European Economic Community – EEC) has been known as the EU since a free-trade area was established within the member countries in 1993.

European Coal and Steel Community (ECSC) An agreement made in 1952 about trade in iron and steel between France, West Germany, Italy and Benelux (Belgium, Netherlands and Luxembourg). It led to the formation of the EEC.

Favela A Brazilian shanty town or squatter settlement.

The First Industrial Nation A term used to describe the UK as the first nation to change from an agricultural to an industrial economy during the eighteenth and nineteenth centuries.

Formal employment Official jobs with set hours and rates of pay. People who are formally employed pay direct taxes to the government.

Free trade The movement of goods and services within a country or trade group which does not require the payment of custom duties.

Gender Male or female.

General Agreement on Trade and Tariffs (GATT) An agreement between countries that encourages the removal of trade barriers to increase international trade and co-operation.

Globalization The expansion of a company from its original country to a position where it has branches in many countries. These have an important influence on world trade.

Gross Domestic Product (GDP) The total value of all the goods and services produced in a country in one year by all the people living in that country.

Gross National Product (GNP) The total value of all the goods and services produced by the people of a country in one year, whether or not they are living there at the time.

Headloaders Informal labourers, mostly women, who act as porters in the Indian textile industry. They are so-named because of the way they carry the materials.

Independence When a government takes on sole responsibility for making decisions about how to run the country it governs.

Informal employment Unofficial jobs that have no set hours or rates of pay. People who are informally employed may avoid paying tax and are usually self-employed.

Infrastructure The structure of communications and services required to support economic development e.g. power supplies, education, health, transport.

Intermediate aid Help usually given by organizations in MEDCs to people living in LEDCs. It often involves small-scale, labour-intensive schemes aimed at providing a sustainable future.

International Monetary Fund (IMF) The IMF was created in 1945. It is an international reserve of money held by the World Bank. It is used to strengthen trade links or for lending to countries in financial difficulties.

Intis The Peruvian unit of currency.

Inward investment Investment into a country usually from multi-national companies based in another country.

Logistics The organization of the distribution of goods and services.

Multi-national companies Large companies with a branch in more than one country. Decisions are made at a headquarters in one of those countries. They are also known as trans-national corporations (TNCs).

National Insurance Contributions A system of compulsory deductions from pay from all adults below pensionable age and from employers in the UK. The money raised provides benefits such as social security, unemployment benefits and state pensions.

Glossary

Negative multiplier effect A downward spiral of events that follow the decline of investment in a region such as decreased spending, the loss of other jobs and out-migration.

Non-Government Organizations (NGO) Groups of people who work with communities in order to improve their quality of life. They are separate from official local and national agencies but sometimes work with them. Most of their work is in LEDCs.

Positive discrimination A process whereby women, disabled people and others from minority groups are encouraged to take part in an activity or apply for a job.

Positive multiplier effect An upward spiral of events that follow a major investment in a region such as increased spending, the creation of other jobs and in-migration.

Protectionism Where the government of a country uses policies that prevent or discourage the import of foreign goods. This enables its own producers to benefit from the lack of foreign competition.

Quality of life The happiness, well-being and satisfaction of a person. Among the many factors that influence quality of life are the person's family, income and access to services.

Quota A numerical limit on immigrants or on imports.

Referendum The process whereby an elected government chooses to ask the electorate to make a direct decision by voting on a specific issue.

Rugmark An NGO that encourages the production and sale of rugs and carpets that have not used child labour.

Self-employed Where a person chooses to work for her/himself as a paid employee and accepts responsibility for paying deductions such as taxes to the government.

Self-sufficient A situation where a person or a community provides all its basic needs without having to trade with groups outside that community.

Smelting The extraction of a metal from its ore by melting.

Source In this case, the money that is taken out of a person's gross pay before they receive it. It includes such deductions as income tax, national insurance and contributions to a pension fund. The person is left with their net disposable income.

Standard of living Those factors which affect a person's quality of life and which can be measured. Many measures of a person's standard of living are to do with possessions.

Tariff barrier Custom duties payable on imports. They are used to raise the price of imports so that home producers can compete effectively.

Technical Assistance to the CIS (TACIS) Help in the form of technical expertise from the EU to countries of the former CIS to improve and develop their infrastructures.

Tiger economies Newly-industrialised countries (NICs) in South-east Asia that showed rapid economic growth in the late twentieth century largely through the creation and expansion of multi-national companies, e.g. LG from South Korea.

Traditional aid Help usually given by organizations in MEDCs to people living in LEDCs. It often involves the lending of large sums of money to develop capital intensive schemes such as multi-purpose dams.

United Nations Development Programme (UNDP) The United Nations is a group of 185 nations originally formed after the Second World War (1939–1945). It is committed to a development programme that includes the sustainable development of the world and its human potential. It also encourages equality, and the elimination of poverty.

World Bank An organization set up by MEDCs who contribute funds that can be used for lending money for development projects in LEDCs.

World Trade Organization A group set up to oversee the international trading system agreed by GATT in 1994. It is run by representatives of the governments of its member-countries.

Theme 1 - Case Studies for: Challenges of Living in a Built Environment

The following case studies can be used to answer the final 'case study' question in your examination. These questions are from THEME 1 – Challenges of Living in a built Environment.

Leicester – Westcotes, Wycliffe, North Braunstone – Urban change

Leire – Counterurbanisation

Brazil – (Caatinga and Favelas) Migration, Service improvement

Rwanda – Forced International Migration

CHANGES IN A LAND-USE OR A SERVICE. (2002)

(i) Name a place you have studies where a land-use or a service has changed.
(ii) Describe how the land-use or a service has changed.
(iii) Explain how the change affected different groups of people and the environment.

A PLACE FROM WHERE PEOPLE HAVE MIGRATED (2002)

(i) Name a place from where people have migrated
(ii) Describe the place that they migrated from
(iii) Explain why they moved away. Refer to push and pull factors.

A PLACE THAT PEOPLE HAVE MIGRATED AWAY FROM (2004)

(i) Name a place that people have migrated away from.
(ii) State whether the place is urban or rural.
(iii) Describe the factors that caused people to migrate. Refer to push and pull factors.
(iv) Explain how the area they migrated from was affected.

IMPROVING SERVICES (2004)

(i) Name a place where services have been employed.
(ii) State whether this place is an urban or rural area.
(iii) Describe how the services have been improved.
(iv) Explain how these improvements affected different groups of people.

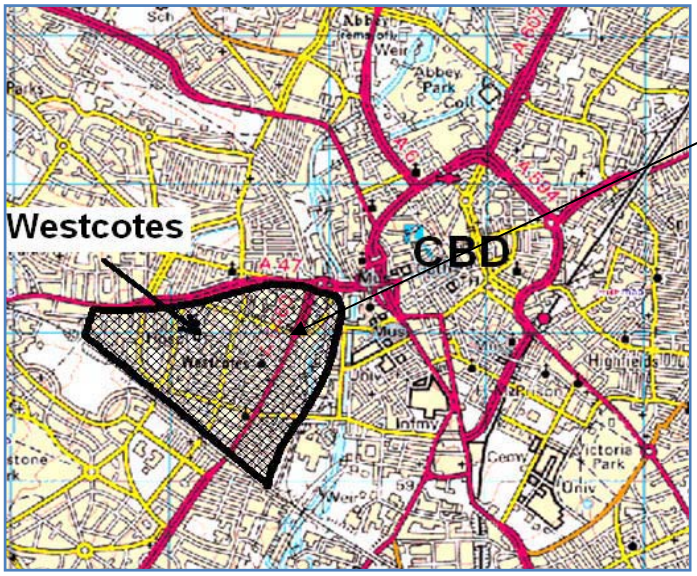
POPULATION CHANGES IN RURAL OR URBAN AREAS (2006)

(i) Name a place where the population is changing.
(ii) Describe the changes.
(iii) Explain how the changes have affected the area.

A PLANNING ISSUE IN A TOWN OR CITY (2006)

(i) Name an area in a town or city where changes to the environment have been planned.
(ii) Describe the changes.
(iii) Explain the effects of these changes on people.

LEICESTER – WESTCOTES: This case study can be used to talk about Service Improvements. You usually need to discuss how the changes link to the local population and how the environment has been improved



LOCATION

Westcotes is an **inner city** ward in the city of Leicester, East Midlands. It is approximately **½ - 1 km West of the CBD** (Central Business District). The majority of the houses are Victorian, terraced houses. They are cramped and have very little private space. Houses do not have driveways or garages or gardens at the front of their houses. Many houses open straight onto the street.

HISTORY

Westcotes was **historically** an **industrial area** with the oldest housing built in 1861.

In **1992**, the Westcotes area was one of the most **deprived** areas in Leicester with **high unemployment** levels and houses **in desperate need of repair.**

THE INNER CITY CHALLENGE SCHEME

Leicester City Council applied to this government run scheme in 1992. They were successful and were awarded more than **£165 million** to be spent in the area and in **1993 the renovations and new developments began**. There was a **five year** plan.

Outcomes of the scheme in 1998.

- Almost **3000 jobs** created.
- Over **4000 houses** built or improved.
- Over **250 businesses** set up
- **Street lighting** increased, **free locks** and **security advice** provided.
- **Five pocket parks** plus a **two hectare park** created.
- Projects include **childcare for working parents**, **lunchtime clubs for elderly Asians.**

Nursery's and childcare centres have been set up to **encourage parents back into work**.

The **land registry building** is a new addition to Westcotes providing **many jobs** for the **unemployed** and **making use of an old building**.

Since 1998…

Additional funds have come from the **Single Regeneration Budget Scheme** and this should see the plans completed.

SERVICE IMPROVEMENT

Shops have been improved in the area. There is a variety of **general stores** including a **Sainsburys Local** that suits the needs of **local students** who do not have private transport.

There are a variety of **ethnic food shops** suiting the **large Asian community** in Westcotes.

The **takeaways and cafes** in the area are also **popular with students** and the **restaurant** is also tailored to the students need providing **reasonably priced food**.

Other changes and service improvements include:

Development of **Bede park**. An area of fields for people to **play games on** and use to relax. Also an **adventure playground** with **CCTV cameras** for **children** and to ensure people's **safety.**

Development of a new **theatre** in the university. This can provide **performances for the local community** but can also be used by **local drama groups**.

Addition of yellow parking lines or **permit holders only** areas. This makes it easier for the **residents to park outside their own homes.**

New zebra and pelican crossing to improve **road safety** in this busy area.

New housing in the **same terraced style** as previous housing. This is good as the **same number of residents can be housed** in the area yet the houses have **more modern facilities – central heating, double glazing, sky/cable TV, telephone lines without the residents having to pay for installation.**

LEICESTER – Highfields/Wycliffe (Inner City Redevelopment): This case study can be used to talk about housing change/ Improvements. You usually need to discuss how the changes link to the local population and how the environment has been changed and how it affects

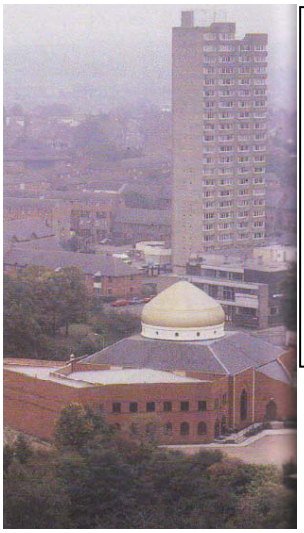
Location
Highfields is in the Wycliffe ward of Leicester to the east of the CBD, in the St. Peter's estate. It is a combination of the old and new. To the east 19th century terraced houses, to the west the redeveloped area, with tower blocks and open spaces.

Why were the high-rise blocks built?
Many terraced houses built in the 19th century were in very poor condition, lacking basic amenities (indoor WC, heating etc), so in the 1960's and early 1970's to solve this and problems of overcrowding in the inner city, large areas of terraced housing were demolished and replaced with tower blocks. The tower blocks could be built cheaply and quickly using the latest technology and materials such as reinforced concrete.

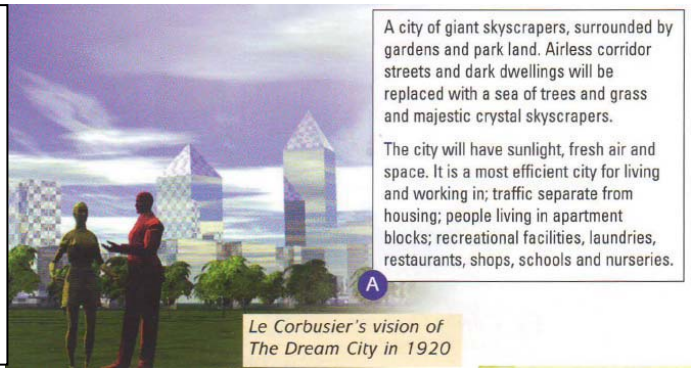
Goscote House opened in 1973 in the Highfields area of Wycliffe. It is 21 storeys high and provides small and large bedsits, one- and two-bedroom flats and a few larger flats. During the years up to 1994 it became one of the least popular of all the high-rise blocks in Leicester.

Why high-rise?
High-rise tower blocks such as Goscote were designed to provide **cheap**, **affordable** public sector (council) housing close to the CBD. The scheme was attractive to local councils who thought tower blocks would improve access to better housing and the city centre for low income groups, and hopefully improve their **Quality of Life**.

The Environment
Building tower blocks created open space in the inner city. Within this space, planners could build small shopping precincts to replace the corner shops that had been demolished, create green areas and could also use the space to build inner ring roads and retail parks, to try and improve the **Quality of Environment** for everyone there.



The Positives of High-rise buildings?
They were originally designed to give people greater access to better quality accommodation, with modern amenities that many of the old terraced houses lacked. The idea seemed simple. To provide people with open spaces and green areas buildings would go upwards and leave room for the plating of trees, lawns and paved areas. (The original vision is stated in source A)→



How is Goscote House used now?
By 1994 it was beginning to get more difficult to rent out Goscote House flats, and people often just refused to take them. At the same time, Leicester University had a problem finding short-term rented property for their students, so a decision was taken to rent to them. Now all the flats, apart from 20, are rented to the University. This solves a problem for the university and provides the council with valuable income.

Positive Views
Residents gave the following views "I don't feel lonely or cut off - there is a launderette and social club here." "I love the view from my room and I get brilliant sunshine flooding in. I have got to know everyone on my floor and there is a real community spirit among us."

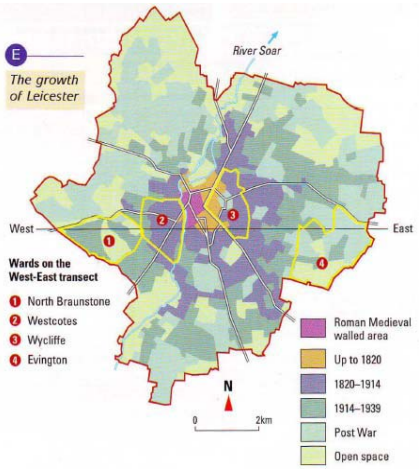
Negative Views
"High above the ground people feel cut off from society" A warden at said, 'It is a very lonely life here. It is amazing that you can live among all these people and still be a stranger." "There are also problems of vandalism and theft, and of rubbish being thrown out of windows."

"At first, I thought moving to Goscote would be a good thing. A place of my own, decent accommodation, plumbing and heating and all for a reasonable rent." He looks thoughtful for a second and then continues "that's not quite how it worked out…. I found myself living in a one bedroomed flat with basic facilities, but worse than that I found myself living in fear. I'd be afraid to go out after dark, the corridors were to dark because the bulbs were broken, it smelt, and the stories of crime in the area stopped me feeling safe."

Why don't people leave?
Many can't afford to, are unemployed, too poorly paid to access mortgages or better rented accommodation. Many are unskilled and un-educated and even though new job opportunities have come to the area they lack the qualifications to be considered for these.

LEICESTER – NORTH BRAUNSTONE – This case study can be used to examine how services have changed within an area. It would focus upon the community/social changes and the effects that they have had upon the local people. This could also be used when answering questions about council housing and the success and failures of it.

Map of North Braunstone



Location: North Braunstone is to the **West** of the CBD in Leicester approximately **4km from the city centre**. It is next to the ward of Westcotes. North Braunstone's houses were mainly built in the **1920s and 1930s** in the **Geometric** housing pattern.

These **council housing estates** were built to provide **better homes** for the people living in the crowded Victorian terraced houses in the inner city. They were built by the council to provide **affordable rented accommodation**.

For the people that were crammed into the **unhealthy slums**, these appeared to be 'dream homes'. However, all housing areas change over time and the 'dream homes' of the 1920's are now described as **problem estates of the present**.

Challenges within Council Estates.

- Higher than average levels of unemployment. The main reasons given for unemployment are:
  - Jobs are too far away.
  - No qualifications.
  - Bus fare is too expensive to jobs.
  - No experience.
  - Children at home.
- Low level of services and leisure activities.
- Vandalism and fly tipping.
- Lack of community feel.
- Unhealthy lifestyles.
- High rate of teenage pregnancy.
- High levels of truancy and low educational achievement.
- Urban dereliction.
- High crime rate.
- Community living in fear.
- Poor living environment.

In **1981** a new housing scheme was launched by the **government** to **improve access to private housing**. The 'Right **to Buy' scheme** allowed residents to buy their own homes at a **low price** (dependent upon how long they had lived there) Throughout the country this had **varying levels of success**. Some council housing areas were heavily invested in by their owners and the areas have improved dramatically as **owners can upgrade, modernise, decorate, take ownership of the property that previously was not theirs.** However in some areas such as **North Braunstone** the scheme was **not as successful**. Only **385 houses out of 1977** were snapped up in the ward. This resulted in **little improvement** in the ward that was already facing many of the challenges shown opposite.

The Vision – 'Ten years from now, Braunstone will be a **beautiful place** to live. Local people will enjoy **good quality housing, services and facilities**. We will be **confident , well educated and hardworking**. We will be **fit and healthy** and live **without the fear of crime**. We will be **fully involved** in and own, the process of improving our estate, and will work with others who share our vision. We will share our brighter and better Braunstone with the rest of the world.

Some ideas that will help meet these targets are:

Theme 1 – Youth work programmes, police officers on the beat and CCTV.

Theme 2 – Grants for small scale enterprises on the estate, improve image and access to bank loans and credit.

Theme 3 – wardens in Braunstone Park, pocket parks.

Theme 4 – support for parents in early years, theatre workshops in health education.

Theme 5 – breakfast clubs at schools, introduce easy reader schemes.

Theme 6 – An annual carnival, community magazine and internet cafe, involve the community in New Deal decisions.

The New Deal:

In **December 1999**, the government awarded North Braunstone **£49.5million** to improve the area over **seven years**. The scheme **began in July 2000**.Hopes are that the area will lose the image as being the most deprived area in the East Midlands.6 key areas were identified as needing to be addressed:

1) **Safety** – high crime rate especially burglary, assault and arson. Adults feel unsafe at night in their homes or walking alone.
2) **Work** – only 55% of 18 – 24s are in work. Co-op employs 40 people, there are few other prospects.
3) **Living environment** – over 120 council houses are empty and boarded up. Fly tipping in gardens and lot of vandalism.
4) **Health and fitness** – Highest rate of teen pregnancy in city. Heart disease and lung cancer rates very high. There is higher than average prescription of anti-depressants.
5) **Educational Attainment** – 84% school attendance, 40% leave school with no GCSE grades, 15.4% leave with 5 A* - C grades and there are very few childcare or after school facilities.
6) **Community confidence and involvement** – the community feels isolated, only 48% have transport and bus services are poor.

BRAZIL – FAVELA IMPROVEMENTS: This case study can also be used to talk about Service Improvements. You need to discuss how the scheme was funded, who run the scheme, and how successful it has been in terms of re-housing people, improving quality of life and the environment for the residents and again how different groups of people have been affected.

LOCATION

CHINGAPURA PROJECT – SAO PAULO, SOUTH EAST COAST OF BRAZIL.

This project is an example of a **'self-help scheme'** in the **Diadema favela**.

- The **local authority provided material** for the local people to **improve the houses** and **install electricity** and **fresh water facilities**.
- The people were also given the **right to be there** and had **to pay rent** for their home.

POSITIVE POINTS ABOUT THE PROJECT

1. Local people were involved, 80**,000 people were rehoused** which is **90% of the people living** in the original favela.
2. The project cost **$30 million**
3. Local people were pleased with the project as the area was **clean,** more **secure** and created a good **sense of community spirit**.

NEGATIVE POINTS ABOUT THE PROJECT

1. Some people thought the area was **less attractive**.

The Chingapura project also helped with other **small community based projects like:**

1. **Small workshops to re-cycle waste (e.g. make sandals from old tyres.)**
2. **Day nurseries to allow parents to go to work.**
3. **Basic sanitation to reduce disease.**

Another project in Sao Paulo is in the **Morumbi favela** and is an example of **'comprehensive redevelopment'.**

This is when the housing/favela is **completely demolished** and **rebuilt from scratch**.

POSITIVE POINTS ABOUT THE PROJECT

1. The houses **were very good with electricity, a clean water supply and toilet.**
2. The **rent was high**, twice as much as the Diadema favela and only people working full time could afford to live there.

NEGATIVE POINTS ABOUT THE PROJECT

1. The project cost **5 times** as much as the Diadema self help scheme.
2. Only **33,000 people were re-housed (60% of the original population**)
3. There were **no schools, hospitals or jobs created in the area.**

New roof

Electricity supplied directly into homes.

New door and added security door to improve safety and reduce crime.

Fences to mark out people's property and areas outside houses for children to play – more open space.

LEIRE – LEICESTERSHIRE: This case study can be used to talk about migration or where a population is changing in MEDC's. It is also an example of counter urbanisation. You should make points about why people chose to move to Leire and why its specific location is desirable. You should also learn about both positive and negative impacts that this has had upon the village and how a variety of people feel.

DEFINITION

COUNTERURBANISATION – The process by which an **increasing number of people live within the countryside rather than towns or cities.**

LOCATION

Leire is a village in **south Leicestershire**. It is approximately **18 km from the city of Leicester** and approximately **6km north of Lutterworth**. There is easy access to the **M1 motorway** connecting to **London** and the South and nearby connections to the **M6 connecting the area to Coventry and the West**.

Why does this occur?

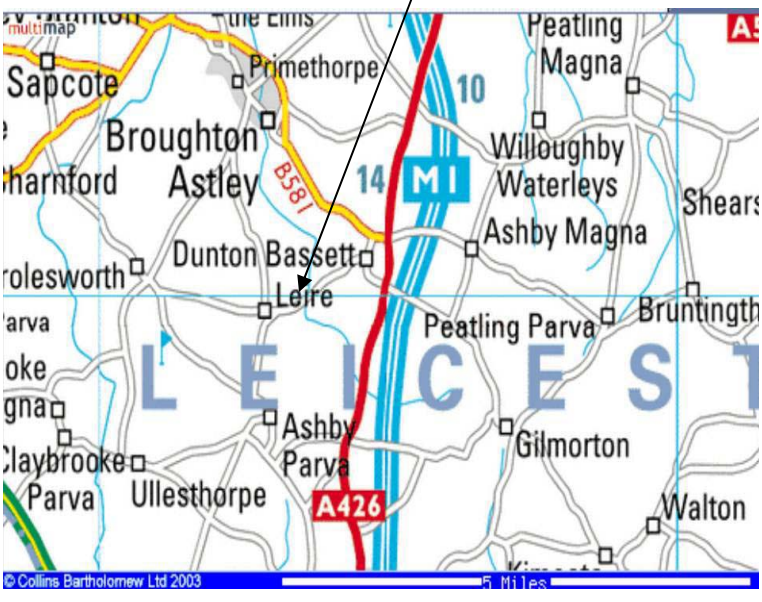
Since the 1950's many people have moved out of towns and cities to live in rural areas. People can do this due to **increased car ownership** and better **roads and transport facilities**.

People are now able to **commute to work**, to **use services** (shops) and for **leisure facilities** (cinemas, restaurants, gyms, pubs).

People also have more **money** than throughout history and **longer holidays**. People enjoy having the countryside on their doorstep to use on weekends and during holiday times.

How has Leire changed?

Since the year 1891 the **population** of Leire has **increased from 284 to approximately 600**. Also, the number of **properties** has increased in the village dramatically changing the appearance of the community. In **1981 there were 82 houses and in 2001 there were 216 houses**.



Where have the houses been built?

Since the 1950's Leire has expanded dramatically. Between 1950 and 1980 the majority of the development took place on the **edge of the village** expanding the area that the village took up and building taking place on **farm land**. Since the mid-1990's most development has taken place on an **old industrial estate (5 detached houses)** and other developments have taken place on the edges of the village **further expanding its boundaries**. The types of house that were built in the village have also changed. There is a **mixture of older council housing, traditional farm-style properties, retirement bungalows and modern executive housing in the village.**

Problems faced by the traditional villagers.

- Dramatic **increase in house prices** has made it **difficult for locals to afford to move within the village**.
- **Public transport has decreased** due to lack of demand. Many **new inhabitants use private transport** and therefore bus services are now minimal.
- **Post Offices, local shops and other services are closing** (e.g. shop closed and turned into a house and chapel turned into a house) /**open for limited time** as many people work away from the village and will not need services as they can go elsewhere on their way home.
- However, there has been a revival **of some community groups** such as the **Women's Institute**, **Brownies, Cubs and a Playgroup.**

BRAZIL – INTERNAL MIGRATION FROM THE CAATINGA (dry zone) to RIO/SAO PAULO (city). This case study can be used to talk about migration or where a population is changing within a LEDC. You should make points about the push factors (reasons for leaving a place) and the pull factors (reasons attracting you to a place). You should also learn about the effects that this change in population has upon the place that the people are leaving and the place that they are moving to.

CAATINGA – North – East Dry Zone

PUSH FACTORS FROM THE DRY ZONE

Pau Ferro

- **Dry** with unreliable rainfall
- **Failing harvests** so not enough food (only flour and water for babies)
- **Lack of water** (only supply is from a stagnant puddle of rain water from months ago)
- **Poor diet – beans and rice most days, goat once every 2 weeks**
- **Illness and death –** 6 out of 15 children have died in one family.
- **No doctors or medical supplies** as the can't afford them
- **Wages are low**.

Sobrahdinho

- The **dam has caused the area to be flooded – 75000 people have been forced to leave their homes and their fertile land is underwater**.
- **Compensation** for their land is **very low**
- The land is now rented and is of poor quality – the scrub land will take a lot to clear and they **do not have enough money to buy the pump to irrigate the land.**
- People live in fear of losing their land, money and being made homeless.

PUSH FACTORS

Harsh weather conditions – hot and dry making farming very difficult.

Poor diet as a result of the weather.

High infant mortality levels due to **poor diet/lack of food** and lack of **medical supplies and doctors**.

Unhygienic living conditions leading to illness and disease due to **lack of money for basic sanitation.**

Lack of education and opportunities. Limited schooling and few careers for young people as the main industry is farming.

PULL FACTORS INTO THE CITY.

PULL FACTORS

Variety of job opportunities, both formal and informal work.

Higher **access to doctors and medical supplies**.

Higher access to **clean water and sanitation**.

More children have access to **education**.

However – **jobs are not guaranteed** and housing is also very difficult to come by and many people end up living in **favelas.**

Decreasing populations in rural areas make **working the land even more difficult** especially as the older residents remain behind. This then means that **food is scarce and illness and death are increased.**

RWANDA – An example of forced INTERNATIONAL MIGRATION. This case study can be used to answer questions about migration or a place where the population is changing. You should learn the background to the migration, where people moved from and why and also how Rwanda has been effected and how the countries people migrated to were affected.

LOCATION OF RWANDA

CENTRAL AFRICA

BACKGROUND INFORMATION

- There are two main ethnic groups in Rwanda.
- The Hutus and the Tutsis.
- For many years these two groups lived in peace and harmony.
- They had different roles in Rwandan society.
- The Hutus were mainly agricultural people and the Tutsis were predominantly cattle herders.
- Over many centuries, intermarriage meant that the two ethnic groups were no longer distinct.

Both Hutus and Tutsis fled during this time. Tutsis to escape being killed and Tutsis because they didn't want to kill or risk being killed themselves.

More than 1.5 million people fled Rwanda during the genocide and they are still returning. Many fled to neighbouring countries including the Congo, Uganda and Tanzania. Others migrated t countries including the UK and many to Belgium to stay with relatives.

In just 3 months it is estimated that between 500,000 and 1 million people had been slaughtered in the massacre.

The effects of the migration were felt in Rwanda and in the countries that they were migrating to.

Rwanda's population was reduced due to people moving and due to a huge number of people being slaughtered. Many people feared for their lives if they returned to Rwanda.

When people migrated to other countries they would place an additional strain on that countries resources. They would increase population numbers and put pressure on housing services, health care and education services. However, migrants also can have positive effects upon areas they move to including the sharing of cultures and creating additional numbers for a workforce.

- Rwanda is still suffering the loss of millions of people during this atrocity.
- Many survivors are still without remains of friends and families despite recovery efforts made by UN anthropologists and archaeologists.
- The AIDS epidemic in Rwanda will be a constant reminder of this act of genocide for years to come.

Current situation

In the years since 1994 the killings have continued. Amnesty International reports arbitrary killings by members in the Rwandan Patriotic Army on people in different opposition groups. The Hutu extremist movement, Interahamwe have been active in the northwest of Rwanda and also Uganda.

Casualties of attacks by both sides have included large numbers of unarmed civilians. The local authorities seem unable to intervene in the killings and the civilians have complained that the Rwandan government is not doing enough to stop the killings.

Case study - Dharavi, Mumbai an LEDC Squatter settlement

As part of Channel 4's Indian Winter season, Kevin McCloud discovers a world of curious juxtapositions in one of the most extreme urban environments on earth: Dharavi, Mumbai.

Episode 1

Having heard bigwig architects, planners and even Prince Charles claiming that Dharavi has the answers to some of the biggest problems facing our Western cities, Kevin embarks on a journey to lift the lid on this place himself. With a million people crammed into one square mile, Dharavi is one of the most densely populated places on earth. It is also one of Asia's biggest slums.

As a way of experiencing the good and bad of Dharavi first hand, Kevin decides to live, work, sleep, eat and wash there, and he's terrified at the prospect of doing so. In the first programme, as Kevin enters Dharavi he finds open sewers, rats and hazardous chemicals everywhere. However, he also discovers that it is a highly organised place with thousands of tiny industries.

To understand Dharavi, Kevin fully immerses himself in the environment, living and working with the locals, sampling life in the pottery area and discovering the extraordinary sense of spirit and community despite the hardships. He explores this industrious square mile, meeting bakers, cobblers and suitcase manufacturers, all thriving as part of the 15,000 one-room industries contained in this slum. But, despite the area's apparent successes, Kevin finds Dharavi is to be redeveloped and razed to the ground.

Episode 2

Kevin's immersive journey through Dharavi continues as he explores the extraordinary recycling industry. Here, 80 per cent of the city's plastic waste is recycled.

Everything from plastic drinking straws to the coating on electric cables gets sorted, stripped down, cleaned and pelleted ready to be re-formed into a new product.

Kevin works alongside the dustmen of Mumbai and follows the rag pickers who eke out a tiny living by collecting plastic from the city's dumps. He meets the people who've made it big in the slum, and visits the most expensive real estate Dharavi has to offer.

Kevin also meets Mukesh Mehta, the man behind the plans to redevelop the entire square mile of Dharavi to create 30,000,000 square feet of housing, schools, parks and roads to serve some of the existing families residing in the area, along with 40,000,000 square feet of residential and commercial space. Kevin weighs up what will be lost when Dharavi goes.

Aid for the people of Mumbai

Here is some information on several charities working to alleviate poverty in slums like Dharavi, Mumbai. By donating money you could make a real difference to the lives of those born into difficult circumstances.

WaterAid

Access to safe water and sanitation are basic human rights, yet in India almost 70 per cent of people are living without something as basic as a toilet. Countless children are often too sick to attend school and every year 386,000 Indian children die before their fifth birthday from entirely preventable diarrhoeal diseases. The health, education and prosperity of some of India's poorest people are suffering simply because of a lack of safe water and sanitation.

WaterAid is an international charity focused exclusively on enabling the world's poorest people to gain access to safe water, improved hygiene and sanitation. Since 1986, when WaterAid began working in India, we have helped hundreds of thousands of people gain access to sustainable and affordable safe water, sanitation and hygiene education. However, the need for this vital work is still huge. Visit WaterAid's website to find out more about their work in India and how you can get involved.

Plan International

Plan International is working to improve the lives of an estimated 5,000 children in the slums of Mumbai, India.

This project will take place in the Garib Nagar and Behrampada slums in East Bandra, along the Eastern side of Bandra Railway Station in the heart of Mumbai. It is a child development programme designed to address issues surrounding health, education, child protection and water and sanitation. Activities will be designed with participation from the children themselves and community members, in order to find the most effective and appropriate solution in direct response to their specific needs. Such as to:

- Support children into school by setting up pre-schools and primary and secondary education bridging programmes
- Halt the spread of disease and improve health through effective hygiene, health and sanitation activities
- Protect children from abuse by raising awareness of children's rights
- Ensure long-term, sustainable improvements by working with local authorities (such as police and healthcare workers) to improve understanding of and services for people living in slums.

This five year project runs until 2014 to provide wide-ranging support for health and sanitation, education, livelihoods and child protection to give children a better future.

ActionAid

ActionAid has been fighting poverty worldwide for over 30 years. ActionAid India was their first country programme, established in 1972, and is now the largest.

Through a network of over 300 local organisations and community groups they work to improve the status of poor and marginalised people – mainly Dalits 'untouchables,' tribal people, women, children, homeless and disabled people. ActionAid lobby the government, international institutions and the media on food, education, health and women's rights. They also work with local partner organisations to help them improve poor people's lives.

ActionAid runs child sponsorship programmes in the Mumbai slums of India amongst others as well as in 30 other countries around the world. These hugely rewarding schemes help children and their families to access an education, safe housing, sanitation and many other life essentials.

Sponsors donate £15 a month and receive regular drawings and letters from the child they sponsor as well as updates from their community so they can see directly how their support is making a difference. There are currently over 5,000 children worldwide desperately in need of a UK sponsor.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

LEICESTER – Liere (Counter-urbanisation): This case study can be used to talk about Service Improvements. You usually need to discuss how the changes link to the local population and how the environment has been improved. Answer the questions below using, your own notes, the PowerPoint or the revision booklet.

1) Where is Leire, and what type of area is it?	
2) How has the land-use changed? (from the past to present)	
3) How have the services changed? (from the past to present)	
4) How have the changes affected people and the environment? (**positive** or **negative**)	
5) Have the changes been successful or not, and WHY?	

CASE STUDY: Changes in a land-use or a service.

(i) Name a place you have studies where a land-use or a service has changed.

(ii) **Describe** how the land-use or a service has changed.

(iii) **Explain** how the change affected different groups of people and the environment.

CASE STUDY - POPULATION CHANGES IN RURAL OR URBAN AREAS

(i) Name a place where the population is changing.

(ii) Describe the changes.

(iii) Explain how the changes have affected the area.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

LEICESTER – Highfields/Wycliffe (Inner City Redevelopment): This case study can be used to talk about housing change/ Improvements. You usually need to discuss how the changes link to the local population and how the environment has been changed and how it affects people's Quality of Life. Answer the questions below using, your own notes or the revision booklet.

1) Where is the Wycliffe ward of Leicester, and what type of area is it?	
2) What was the area like before the redevelopment?	
3) How has the land-use changed? (from the past to present)	
4) How have the changes affected people and the environment? (Quality of Life **positive** or **negative**)	
5) Was the redevelopment successful or not, and WHY? What are the alternatives to these buildings?	

CASE STUDY: Changes in a land-use.

(i) Name a place you have studies where a land-use or has changed.

(ii) **Describe** how the land-use has changed.

(iii) **Explain** how the change affected different groups of people and the environment.

CASE STUDY: A planning issue in a town or city.

(i) Name an area in a town or city where changes to the environment have been planned.

(ii) Describe the changes.

(iii) Explain the effects of these changes on people.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

Migration – Watch the DVD that describes life in Nairobi.

Answer the questions below either using the video or your knowledge about the Brazil migration case study.

1) Describe a place that people have migrated from. (location, climate, economy, jobs, hazards, transport links, public facilities)	
2) Explain the PUSH factors.	
3) Describe the place that people have migrated to.	
4) Explain the PULL factors.	
5) What effects (positive/negative) has the movement of people had upon both the places. (social, economic, environmental)	

Example exam question:

(i) Name a place from where people have migrated away from.

(ii) State whether the place is urban or rural.

(iii) Describe the factors that caused people to migrate. Refer to push and pull factors. Explain how the area they migrated from was affected.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

LEICESTER – WESTCOTES (Inner City Redevelopment): This case study can be used to talk about Service Improvements. You usually need to discuss how the changes link to the local population and how the environment has been improved. Answer the questions below using, your own notes, the PowerPoint or the revision booklet.

1) Where is the Westcotes ward of Leicester, and what type of area is it?	
2) How has the land-use changed? (from the past to present)	
3) How have the services changed? (from the past to present)	
4) How have the changes affected people and the environment? (**positive** or **negative**)	
5) Have the changes been successful or not, and WHY?	

CASE STUDY: Changes in a land-use or a service.

(i) Name a place you have studies where a land-use or a service has changed.

(ii) **Describe** how the land-use or a service has changed.

(iii) **Explain** how the change affected different groups of people and the environment.

CASE STUDY : A planning issue in a town or city

(i) Name an area in a town or city where changes to the environment have been planned.

(ii) Describe the changes.

(iii) Explain the effects of these changes on people.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

LEICESTER – North Braunstone (Relocation to outer suburbs): This case study can be used to talk about **land-use change**. You usually need to discuss how the changes link to the local population and how the environment has been altered. Answer the questions below using, your own notes, the PowerPoint or the revision booklet.

1) Where is the North Braunstone ward of Leicester, and what type of area is it?	
2) Why were the council estates developed on the outskirts of cities? What was the 'Right to Buy' scheme and was it successful in North Braunstone?	
3) What is the 'New Deal'? What were its aims in North Braunstone?	
4) How have the changes affected people and the environment? (**positive** or **negative**)	
5) Have the changes been successful or not, and WHY?	

CASE STUDY: Changes in a land-use.

(i) Name a place you have studied where a land-use has changed.

(ii) **Describe** how the land-use has changed.

(iii) **Explain** how the change affected different groups of people and the environment.

CASE STUDY : A planning issue in a town or city

(i) Name an area in a town or city where changes to the environment have been planned.

(ii) Describe the changes.

(iii) Explain the effects of these changes on people.

Theme 2 - Case Studies for: People and the Natural World Interactions

The following case studies can be used to answer the final 'case study' question in your examination. The three sections have titles. This is from the 'Theme 2 People and the Natural World Interactions'.

Weather and Climate

Hurricane Katrina – A weather event caused by a low pressure system

European Summer 2003 – A weather event caused by a high pressure system

Monsoon **Climate** – A type of climate

Tropical Rainforest – Ecosystem used sustainably
– Ecosystem used unsustainably

Savannah - Ecosystem

Global Warming – Issue of global importance

Acid Rain – Issue of global importance

CASE STUDY: A weather event caused by a high OR low-pressure weather system. (2003)
(i) Name a location where you have studied a weather event.
(ii) State whether the weather event was caused by **a high OR a low pressure weather system.**
(iii) Describe how the weather event affected people and the environment.
(iv) Explain what caused the weather event. Use diagrams if you wish.

CASE STUDY: The effects of people on an ecosystem. (2003)
(i) Name and locate an ecosystem you have studied.
(ii) Describe the structure of the ecosystem. Refer to plants and animals. Draw diagrams if you wish.
(iii) Explain how and why people are changing (or have changed) the ecosystem structure.

CASE STUDY: An ecosystem that is being used in an unsustainable way. (2004)
(i) Name a place where you have studied an ecosystem that is being used in an unsustainable way by people **or** organisations.
(ii) Name the type of ecosystem you have studied.
(iii) Describe how people **or** organisations are using this ecosystem.
(iv) Explain why this makes the ecosystem **unsustainable**.

CASE STUDY: A type of climate (2004)
(i) Name a type of climate you have studied.
(ii) Name a place where this type of climate can be found.
(iii) Describe the main features of this type of climate. Refer to the whole year.
(iv) Explain how **plants and wildlife** OR **different groups of people** are affected by this type of climate.

CASE STUDY: A weather event caused by low pressure. (2005)
(i) Name and locate a weather event that has been caused by a **low pressure weather system**.
(ii) Describe the weather event.
(iii) Explain how the weather event affected different groups of people and/or organisations.

CASE STUDY: An ecosystem and climate.
(i) Name and locate an ecosystem that is found on land.
(ii) Describe the plants and animals found in this ecosystem.
(iii) Explain how the plants and animals are adapted to the climate of this ecosystem.

CASE STUDY: Consequences of changes in ecosystems. (2007)
(i) Name and **locate** an ecosystem you have studied.
(ii) Describe the main features of this ecosystem.
(iii) Explain how this ecosystem affects the lives of different groups of people.

CASE STUDY: A weather event caused by high pressure. (2007)
(i) Name and **locate** a weather event that has been caused by a high pressure system.
(ii) Describe the weather event.
(iii) Explain how the weather event affected people and the environment.

<u>Water and landforms (Including rivers and coasts)</u>

River Tees – River landforms
– Human impacts on a river

The Holderness Coast – Coastal landforms
– Coastal management

Keilder Reservoir – Water resource management

Mississippi – River flooding MEDC

Boscastle – River Flooding MEDC (UK)

Bangladesh – River Flooding LEDC

CASE STUDY: A scheme to change the supply of water (2002)
(i) Name a place where the supply of water has been, or is being, changed by people.
(ii) Describe how the supply of water was, or is being, changed.
(iii) Explain how the changing water supply is affecting, or will affect, **different groups of people** or **organisations**.

CASE STUDY: A landform formed by water action that attracts people (2002)
(i) Name a landform formed by water action that attracts people.
(ii) Describe what attracts people to the landform.
(iii) Explain how people's use of the landform brings **advantages** and **disadvantages**.

CASE STUDY: A place where a serious flood OR a serious drought has affected people and the environment. (2003)
(i) Name a place where you have studied a serious flood OR a serious drought.
(ii) Describe how the flood or drought affected people and the environment.
(iii) Explain what people could do OR have done to prevent the flood or drought affecting them in the future.

CASE STUDY: A river landform. (2003)
(i) Name a place where you have studied a river landform. Name the type of landform and state **whether it** was created by **erosion** or **deposition**.
(ii) Describe how the river landform was created.
(iii) Explain how the river landform has been **OR** is being used by people and/or organisations.

CASE STUDY: A landform created by the work of the sea. (2005)
(i) Name and locate a landform that has been created by the work of the sea.
(ii) Describe how the landform was created by the sea.
(iii) Explain any advantages and disadvantages that the landform brings to the area around it.

CASE STUDY: A coastal management scheme that protects the coast from the action of the sea. (2005)
(i) Name and locate a coastal management scheme that has taken, or is taking, place to protect the coast.
(ii) Describe the scheme.
(iii) Explain why the scheme was, or is, necessary.

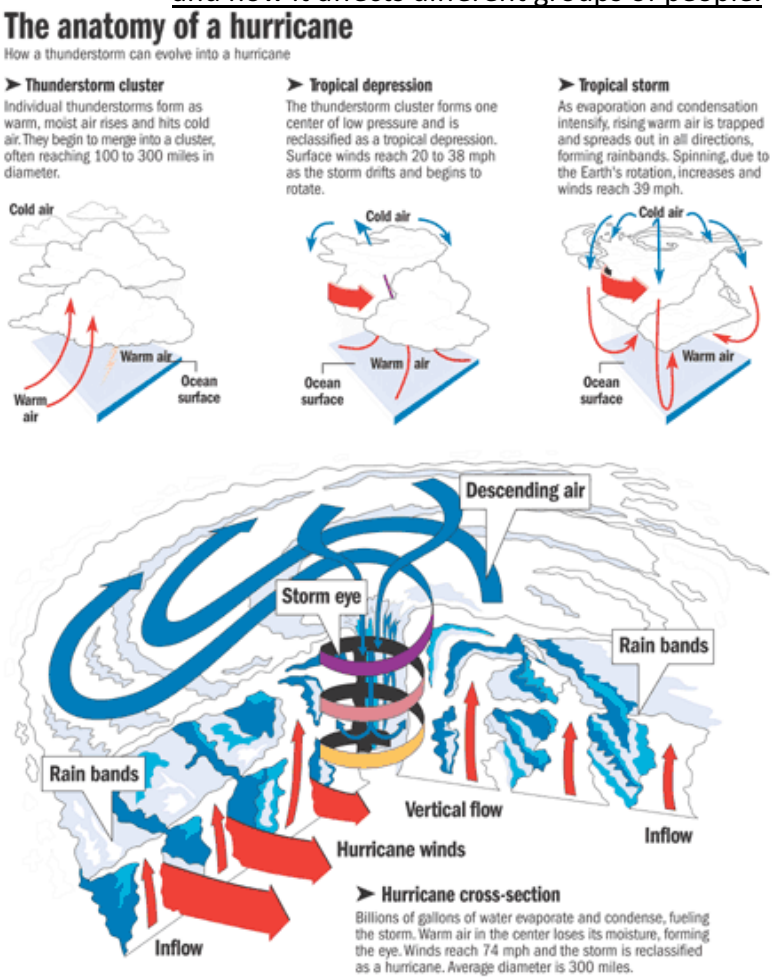
CASE STUDY: A place that has been affected by flooding. (2006)
(i) Name the place that has been affected by flooding.
(ii) Describe the effects of the flooding on people and the environment.
(iii) Explain what caused the place to flood.

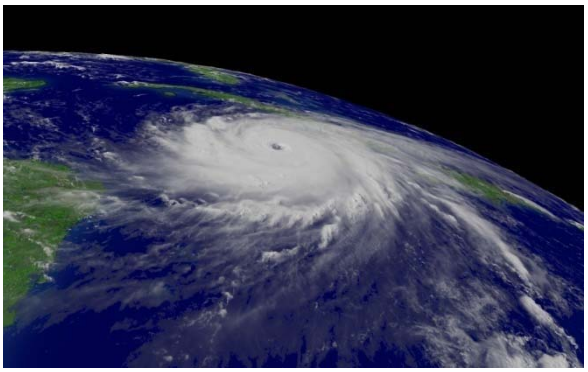
CASE STUDY: A river landform (2005)
For a river landform you have studied:
(i) Name and **locate** the landform
(ii) Describe the landform.
(iii) Explain how it was formed. Use the diagrams to help.

CASE STUDY: The effects of a flood on people in a More Economically Developed Country (MEDC). (2007)
(i) Name and **locate** an area of an **MEDC** where flooding has taken place.
(ii) Describe how the flood affected different groups of people.
(iii) Explain the causes of the flood.

CASE STUDY: A river landform. (2007)
(i) Name and **locate** a river landform you have studied.
(ii) Describe the main features of the landform.
(iii) Explain how the landform was formed.

Hurricane Katrina - This case study can be used to talk about a **LOW PRESSURE** weather event. You usually need to discuss how the weather event is formed, its general impacts, and how it affects different groups of people.





What is a Hurricane?

A Tropical storm (HURRICANE) is an extreme **depression** or **low pressure** system.

Where/Why do Hurricanes form? (see diagram left)

They form over seas warmer than 27°C

Very Moist hot air rises from the water's surface

The rising air meets colder air as it rises

The process of **evaporation** causes heat and creates violent surface winds

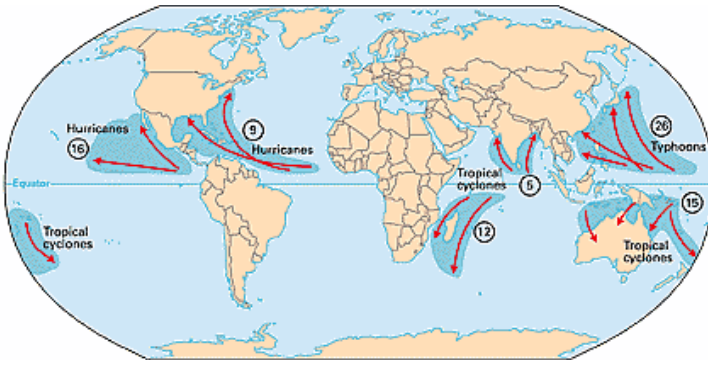
The spin of the earth causes the winds to rotate

The winds twist around a centre of extreme **low** pressure called the **eye** and reach speeds of up to 200kmph

Winds are strongest around the centre but the eye is calm.

Hurricanes are formed in the tropics where the ocean is warm enough to provide the energy needed for the large amounts of moisture to rise into the atmosphere. They do not occur on the equator as there is not enough force (the same force that makes water spiral down a plug hole) to make the wind spin.

Where do Tropical storms / Hurricanes occur?



How did the weather event affected people and the environment?

Hurricane **Katrina** began out in the Atlantic Ocean on the 23rd Aug 2005 as a series of storms (LOW PRESSURE). It then followed the path shown above, hitting parts of the Caribbean and southern Florida. Although damage was done to homes and businesses, worse was yet to come. As the Hurricane travelled over the Gulf of Mexico, it gained more energy and it became a maximum strength **category 5.**

SUN28 AUG- New Orleans, 6ft below sea level orders the evacuation of the city. Motorways are jammed as people try to leave. Some of those unable or unwilling to leave (**often the poorest**) spend the night in shelters.

MON29 AUG - Much of New Orleans flooded, winds of more than 100mph tear off part of Superdome roof, where 9,000 people are taking refuge. Power lines cut, trees felled, shops wrecked and cars destroyed. Some of the city's flood defences have been breached.

TUE30 AUG -80% of the city under water. Helicopters and boats pick up survivors stranded on roofs. Rescuers have to push aside the dead bodies floating in the water, to reach survivors.

WED31 AUG-SEP1- Thousands dead. Full evacuation of the city (100,000 still there). Thousands of people in Superdome, conditions inside are extremely poor. Some looters are stealing goods, others are trying to find food and water, reports of looting, shootings, and rapes.

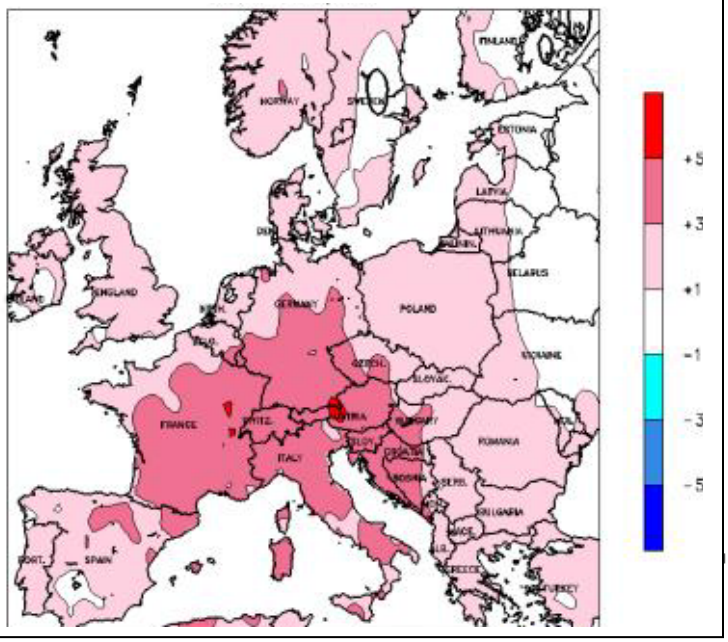
SAT3 SEP - Relief workers begin collecting corpses, many of which have been floating in the streets for days. New Orleans almost deserted.

MON5 SEP - Residents who fled allowed to return briefly to inspect their homes in New Orleans and collect personal items.

WED 7 SEPT FEMA gives out debit cards worth up to $2,000 per household to registered evacuees as financial aid.

Europe Heatwave 2003 - This case study can be used to talk about a **HIGH PRESSURE** weather event. You usually need to discuss how the weather event is formed, its general impacts, and how it affects different groups of people.

Summer 2003 temperatures compared to average.



Where did this weather event happen?(see map left)

Early August 2003 saw summer temperatures soar to record levels all across **Europe**.

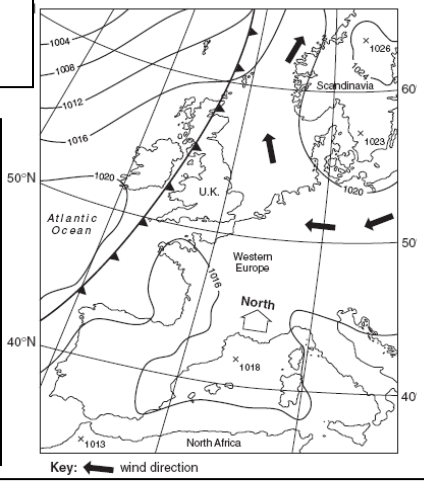
England, like other European countries, experienced daily temperatures well in excess of the August average, resulting in a **Heatwave**. Temperature records were broken in England and Wales, with Brogdale in Kent recording the UK's highest-ever temperature of 38.5°C on 10 August.

The Rest of Europe. The **Heatwave** began in early summer 2003, when Switzerland experienced the hottest June since record keeping began 140 years ago. In July, the heat engulfed the whole continent including France, Portugal and Italy.

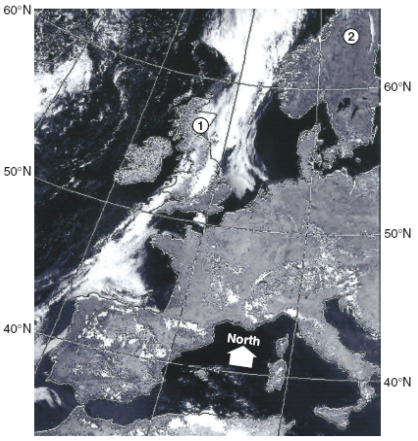
Why did the Heatwave happen?
Hot, dry continental air was drawn over England and Wales from the east (see wind direction on map right). This warm air, combined with an unusually **high pressure** (1018 mbars) caused high daytime heat and night-time temperatures which were more than 6°C to 8°C above the norm for August.

In the satellite image (right) there is very little cloud cover, and calm conditions that allowed the land to heat up more and more each day

Weather Map for 10th August 2003



A satellite image of Western Europe taken on 10th August 2003



How did the Heatwave affect people and the environment?
The heatwave had a serious impact on **mortality** (deaths). In England, between the 4th and 13th August 2003 there were 2,091 (17%) **more deaths** and 1,311 (1%) more **emergency hospital admissions** than the average for the same time of year. This excess in **mortality** was greater than previously recorded for the heatwaves of 1976 and 1995 (two previously record breaking summers).

The biggest increase in deaths for the rest of England was in **Central and Southern areas**, where temperatures were highest. In the East, there were 27% more deaths above the average for both the 0–64 and 75 and over age groups.

Many cities also suffered from power-cuts or blackouts due to higher demand than usual from people using air conditioning etc to stay cool. This also affected New York USA on 14th of August for similar reasons and the city ground to a halt.

Groups of People
People aged 75 and over are most vulnerable to heat-related mortality, especially when they live on their own, as they may not receive adequate hydration, and may be reluctant to call for medical attention. During the heatwave, deaths in England in this age group **increased by 23%** compared with the expected average.

Smaller increases in mortality were seen in most regions in the 0–64 age group. This may reflect an increase in mortality in children and infants, who are also at risk from heat-related deaths, or an increase in mortality from already sick adults.

France experienced its highest temperatures for 50 years with 11 consecutive days in August seeing temperatures above 35°C. Nearly 15,000 more people died than expected between 1 and 20 August. The greatest number of deaths was also in the 75 and over age group, with more than 60% of deaths occurring in hospitals, private healthcare and retirement homes.

Environment
With the decrease in water from rainfall and increase in heat, Evaporation led to many rivers and lakes becoming low or dried up. This led to the death of many animals that lived in or relied upon these areas as a habitat or for food (Food webs)

Many crops also failed as the land was too dry and water did not come in the form of precipitation and in places farmers were not allowed to water crops due to water shortages.

The Indian Monsoon - This case study can be used to talk about a CLIMATE. You usually need to discuss how the climate changes during the **whole** year (seasons) and how it affects the environment and different groups of people.

What is the Monsoon?

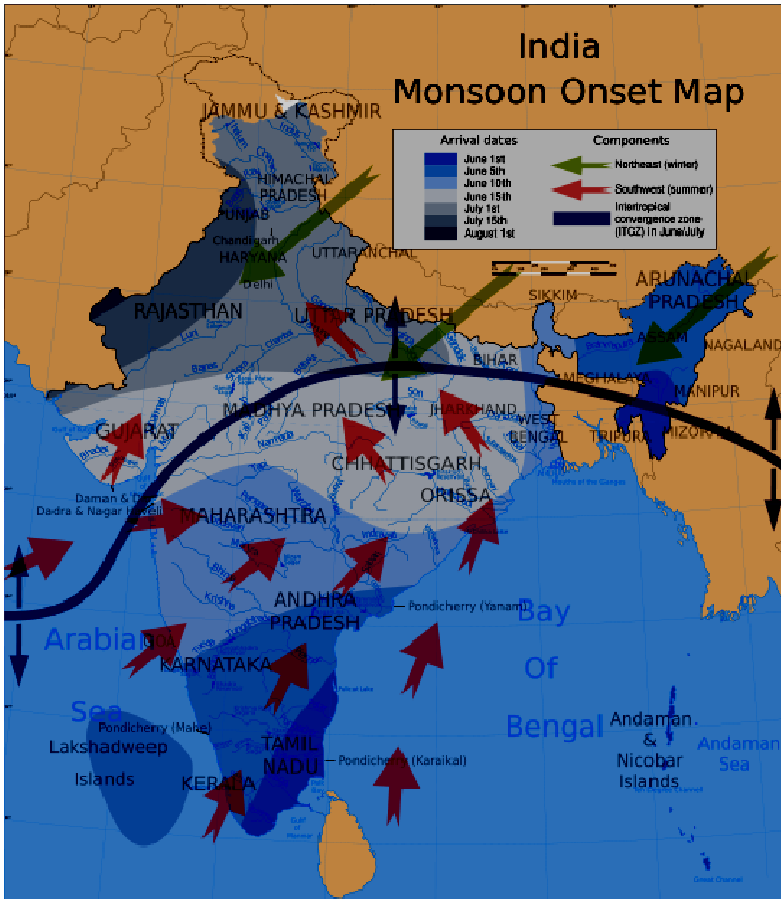
The **Monsoon** is a type of **Climate**. It is characterised by **two** main seasons. A **wet season** and a longer **dry season**

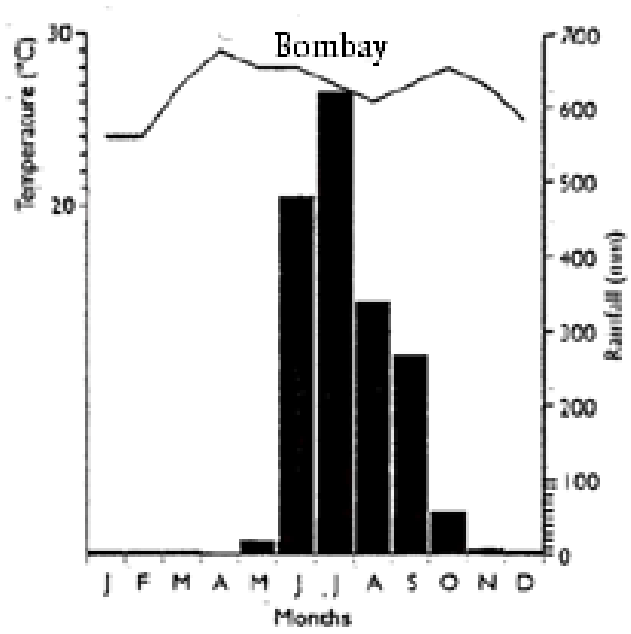
Every year in India millions of farmers rely on the Monsoon climate. The word monsoon comes from the Arabic word *mausim* which describes a period of **very high rainfall during the summer months**. The rains follow several months of **very hot, dry weather** and are eagerly awaited by the whole nation. People celebrate the arrival of the monsoon and even go to the beach to enjoy the rain!

Why do the Monsoon rains happen?

The monsoon is mainly caused by the **heating up of the Indian continent** during the hottest months, which draws in air from the sea (see map right).
The winds which blow from the south-west are full of moisture due to **evaporation** from the Arabian Sea. At the beginning of June, the monsoon 'breaks' (begins the **wet or rainy season**) starting from the southern tip of India and moves northwards. By early July the monsoon rains have covered the whole country.

Most of the rain falls along India's western coast, but part of the monsoon spreads through the Bay of Bengal bringing rains to the fertile Ganges valley. In these areas, rice, the country's main subsistence crop is planted.





Why are the two different seasons important?

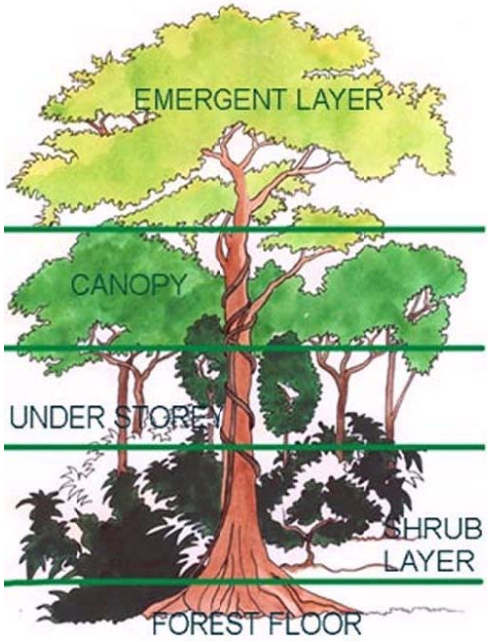
Although the monsoon can cause problems, the rains that occur in the **wet season** (between **June** and **September**) are vital to India's farmers, representing almost **75% of the total annual rainfall** in most years. By October, the monsoon retreats back to the south and dry winds begin to blow from the north-east, bringing a cooler drier period until the arrival of the next year's monsoon, the **dry season** (between **October** and **May**)

As the climate graph shows, India's temperature range is a relatively small 5°C (between 24 and 29°C) so it is the difference in rainfall that gives India is seasons (**two** compared to the UK which has four).

How are people and wildlife affected by the Monsoon climate?
The people of India are affected in many ways by the Monsoon climate.
Positives - the Rainy season brings with it relief from the very hot weather that comes in **March – May**, and provides a boost for the Indian tourist economy as many people will take **Monsoon holidays** where they go to the beach etc during the wet season.
Farmers will rely on the water that comes in the wet season to grow most of their crops for the year, providing them with an income.
Plants will generally blossom at this time of year and animals will feed on these and rely on them for their habitats etc (food webs).

Negatives - Monsoon **rains are known to be unreliable**. In northern Sri Lanka July rainfall is expected to be 30mm, but in nearly half of a 40 year period, little or no rain fell. Since rice is the main subsistence crop in countries like India and Sri Lanka, the years where there is a lack of rainfall can cause problems such as **drought** and **starvation**.
Flooding can also be a major problem for a number of reasons. During the **rainy season** rivers often become impassable (virtually impossible to cross) and many people lose their lives trying to cross. Secondly if the rivers burst their banks then large areas may be flooded which can lead to the spread of disease. Thirdly, heavy rainfall on hillsides can lead to loss of life from such events as mudflows.

Rainforests - This case study can be used to talk about an ECOSYSTEM. You usually need to discuss where the ecosystem is, the plants and animals, and how the environment has been changed and the impacts on/by people.



Describe the structure of the ecosystem. (You will often be given the choice to draw a diagram for the part of the case study question)
The Rainforest is divided into **5 main layers** each with different characteristics: (See diagram left)

Descibe the main features of this ecosystem.

The Litter Layer (or forest floor) – This is the layer where leaves etc that fall to the ground will **decay** and be broken down to supply **nutrients** for the forest to grow. This layer is home to large numbers of **insects (beetles and termites), fungi** and a few **small mammals**.

The Shrub Layer – This layer is between the ground and 10m high and is made up of smaller plants, bushes and shrubs, where there is little sunlight. This layer is home to **Pythons**, **frogs** and **insects**.

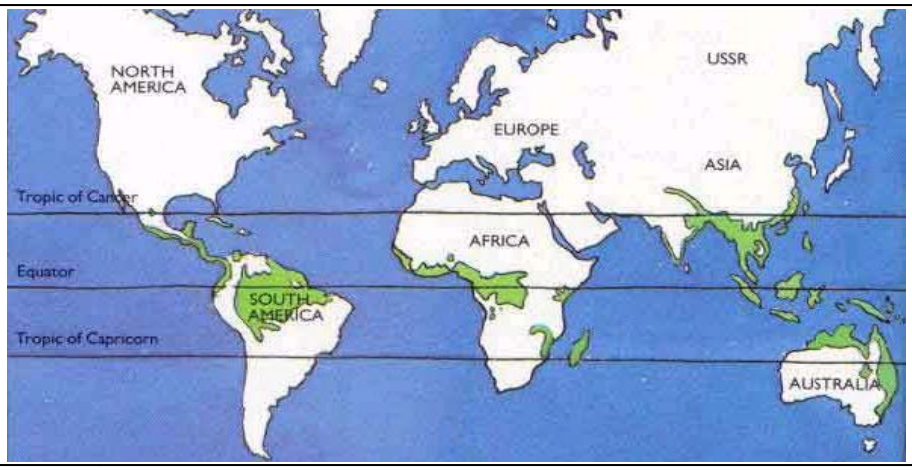
The Under Canopy (storey) – This layer is made up of **young trees** which are growing towards any light coming through the Canopy layer 10-20m. **Monkeys**, **insects Tarsiers** habitats are here.

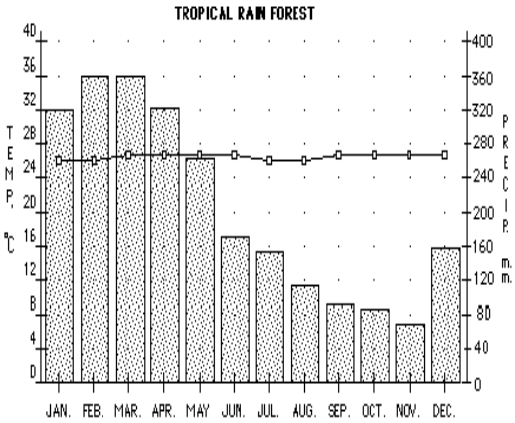
The Canopy – A continuous layer of tree tops (much of the rain is **intercepted** here) around 30m high. Home to **parrots**, **gibbons bats** and **insects**.

The Emergent Layer – The tallest of trees, 40m+, found scattered above the canopy and home to birds e.g **Hornbills** and other birds of prey.

Describe the location of the Rainforests.
The map (right) shows the locations of the world's rainforests. They are generally located along the **Equator** between the **Tropic of Capricorn** (23°S) and the **Tropic of Cancer** (23°N) – **The TROPICS**, hence the name **Tropical** rainforests.

They are found in S. America, Africa Indonesia, Australia, Malaysia and parts of Asia.





The rainforest climate
Temperature – Temperature range is between 2 and 3°C (No seasonal difference)
Precipitation – Its is very wet all year round, although there is a slightly drier and a slightly wetter season (see climate graph for Amazon, left).

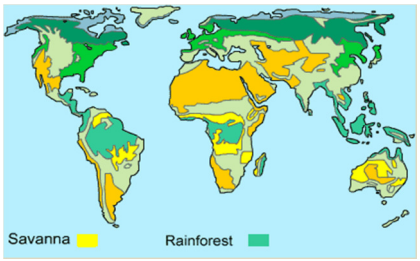
SUSTAINABLE – the use and management of a resource so that it is maintained and can be used by **future generations**.
UNSUSTAINABLE – Present use means the resource will run out and not be replaced

Plant adaptations
Tall, straight trunks, smooth barks, spear shaped leaves with drip tips
Canopy at 40m traps 90% of light and 80% of rain.
Buttress roots keep plants stable, climbing plants feed off of trees (lianas and strangler figs).
When trees fall allowing light through to floor, stimulates rapid growth as trees compete to reach the canopy.
Epiphytic mosses and lichen grow on other vegetation (don't grow in soil)
Too much water can rot vegetation so plants have waxy leaves, smooth barks and drip tips to shed water..

Uses of the forest
SUSTAINABLE uses include**, Shifting cultivation** – tribes clear small plots and farm for 3-4 years before clearing another patch and letting the first regenerate . Requires large areas to support small numbers of people. People able to gather materials to meet all needs, (clothing, food, shelter and medicine). **Sustainable farming** planting crops under the trees – banana and cocoa crops for money & other crops for food. **Selective logging** – small scale farming only removes mature trees and no other damage or road building. **Ecotourism –**Kakum National Park Ghana with aerial walkways to minimise impact *'Take nothing but photos leave nothing but footprints'*. Ex-poachers also employed as guides to protect wildlife.

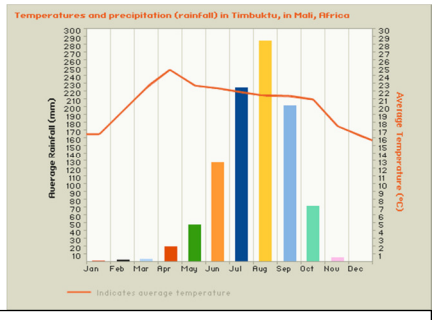
UNSUSTAINABLE uses include slash and burn for **Cattle Ranching,** as the soils in the rainforest have few nutrients and more and more land has to be cleared to support only a few animals. **Timber** production as roads and other trees are cleared to get to just a few mature trees e.g **Mahogany**. **Mining** which removes the forest on a large scale and does not allow forest to re-grow. **HEP** where areas are dammed and flooded to generate electricity.

Savannah – This case study can be used to talk about an ECOSYSTEM. You usually need to discuss where the ecosystem is, the plants and animals (Flora and Fauna) and how the environment has been changed and the impact of/on people.



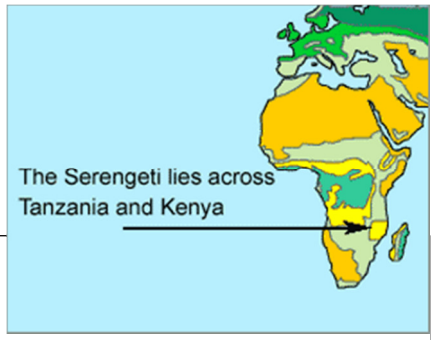
The savannah *biome* **(***A large-scale ecosystem***) is dry, but not as dry as desert areas and can be found in the central part of Africa and in South America.** Also known as tropical grasslands they are found to the north and south of tropical rainforest. The largest expanses of savannah are in Africa, where much of the central part of the continent, for example **Kenya** and **Tanzania.** They can also be found on other continents, such as **Brazil** in South America.

There are TWO SEASONS, a wet season and a dry season. The wet season allows the vegetation to grow and during this season the vegetation can include lush green grasses and wooded areas. As you move further away from the equator and its heavy rainfall, the grassland becomes drier and drier - particularly in the dry season. Savannah vegetation includes scrub, grasses, and occasional trees which grow near *water holes* [**water holes**: *Areas where the water table comes to the surface of the earth, allowing water to be available for plants and animals to consume*].



The graph above shows average monthly temperatures and rainfall levels in the savannah region of Mali. Notice how the temperature and rainfall patterns relate to each other: the hottest time of the year comes just before the period of heavy rainfall, and the coolest time of the year comes just after the rains. This pattern is typical of savannah climates.

The Serengeti extends for 14,763 square kilometres and there are two main types of vegetation in the Serengeti. The vast open plains of the south-east region are covered by short and long grasses, while in those of the central region acacia savannah predominates. The Serengeti is rich in wildlife, including giraffes, zebras, elephants, lions and over 2 million wildebeest. Many of the animals found on the Serengeti can be found nowhere else in the world.



Case Study: human interference in the Serengeti

The savannah ecosystem is a delicate balance of interdependent relationships between different species. This balance is easily disrupted by any human intervention, and the smallest change can have knock-on impacts on other people, animals, plants and the wider environment.

Human impacts may resonate over different timescales (temporal impacts) and over smaller or wider areas (spatial impacts).
Desertification can result from poorly-managed human intervention in the savannah. Desertification is the process by which areas of desert are created by the destruction of natural vegetation. Causes of desertification include: removal of vegetation cover, overgrazing, uncontrolled fuel wood collection, inadequate farming practice and loss in fertility of soil, excessive tree felling.

The Masai and desertification

Many people in central Africa are poor and have to farm to produce the food they eat. The Masai tribe of the Kenyan Serengeti practise *nomadic farming* [nomadic farming: *type of livestock farming in which the farmers do not settle in one place, but continually move with their herds to new pastures*], a traditional method of farming which has the environmental benefit of allowing vegetation to recover from animal grazing whenever the farmers move on to another area. These Nomadic farmers have been forced out of the Serengeti National Park

However in the past 40 -50 years the Masai's way of life and farming have been disrupted as a result of commercial pressures and government policies, and the ecosystem has started to suffer. In some areas commercial farmers, encouraged by government policies, have moved into the best dry-season land and converted it to commercial agriculture. As savannah is converted into cropland, the natural vegetation is removed and the soil's nutrients are rapidly used up.
When the Serengeti National Park was established in the 1950s to conserve wildlife and encourage tourism, human access to the park was restricted and the Masai were excluded from it. The Serengeti region's population has expanded rapidly over the past 30 years putting increased pressure on land, resulting in larger herds grazing the grassland, and causing more trees to be cut down for fuel. As vegetation is removed and ground left bare, there is a risk of soil erosion.
The combined effect of these interventions was to force the nomadic Masai farmers onto marginal land. Their tradition pastoral migration patterns have been disrupted and they have been compelled to use smaller and smaller areas of land for their cattle. Overgrazing has been the inevitable result. Another result of the Serengeti's increasing population is a growth in demand for meat, which in turn has led to a rapid increase in meat poaching.

Tourism in the Serengeti
Tourism brings income to the Kenyan people and gives tourists a greater understanding of the biome and its animals and plants. The Serengeti is especially popular for safari holidays which give tourists a chance to observe the annual migration of the wildebeest and zebra.
But tourism can also have negative impacts on the area. These need to be managed carefully to ensure that the natural environment isn't damaged for future generations.

Positive impacts of tourism

Conservation - tourism has supplied the economic incentive to set up national parks and conservation areas, in order to protect the wildlife which the tourists come to see.

Employment - tourism has generated jobs, and therefore improved living standards for local communities.
Infrastructure - this has improved as roads, airports and other facilities for tourists have been built.

Negative impacts of tourism

Environmental damage - roads and tracks for safari jeeps can erode grass cover, damaging plant and animals species and disturbing local habitats. The removal of vegetation for the construction of roads can lead to increased soil erosion.

Inequality - often those who benefit most from the profits of tourism are not local people but wealthy landowners or the hotel and travel companies in MEDCs.

Loss of traditional cultures - for example, the disruption to the Masai's way of life and traditional farming methods as a result of the setting up of the Serengeti National Park.

Land clearance - cutting down trees provides timber for safari lodges and fuel for cooking - but also leads to ecosystem damage through soil erosion.

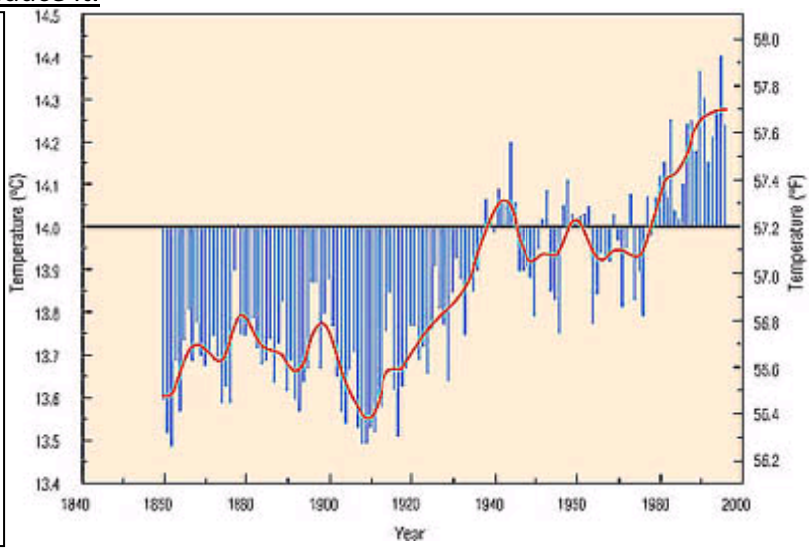
Water cycle damage - diverting water for tourists can leave local aquifer and water reserves exploited - leaving local people, plants and animals short of water. Tourist hotels are sometimes responsible for water pollution as a result of waste dumping into rivers.

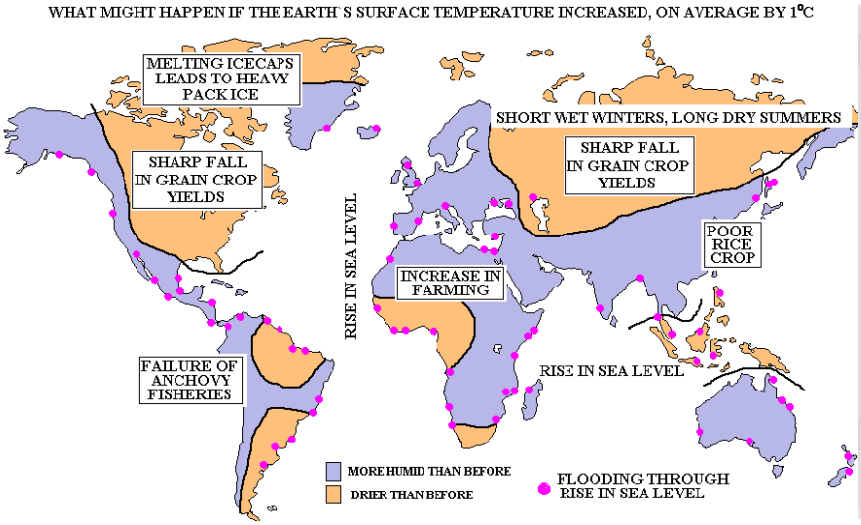
The Future
Conservation is the key to protecting the Serengeti for future generations. To achieve a sustainable future in the Serengeti, the following policies need to be adopted:

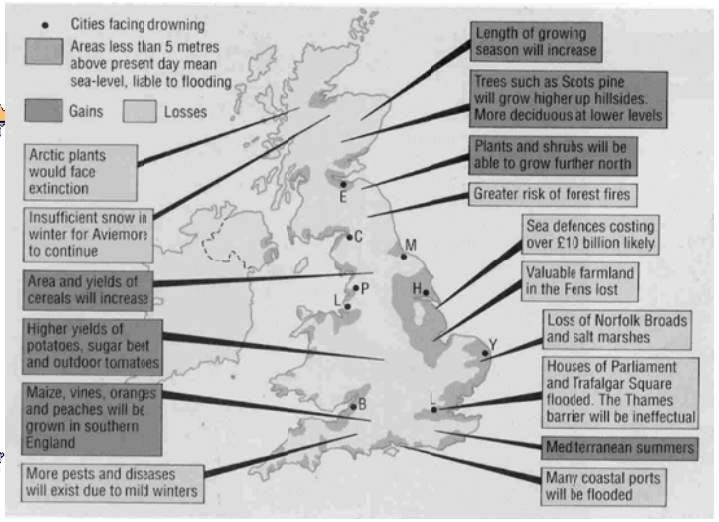
- local people to be employed by investors
- respect for culture and customs for local people
- local people receive some financial gain from tourism
- social facilities to be improved
- better protection of the environment
- improved conservation education programmes for local communities and farmers.

Global Warming (Climate Change) – An issue of Global importance. This case study can be used in a number of areas, but generally looks at the causes, the effects on people and places and what can be done to prevent / reduce it.

What Causes Global Warming?
Although the Earth's atmosphere contains mainly nitrogen (78%) and oxygen (21%), there are other gases in small amounts that have a large influence on atmospheric temperature.
Carbon dioxide is the most important of these but there are other ones such as **Methane** and **CFC's** . These gases act a bit like the glass in a greenhouse. They let the radiation from the sun pass through them to reach the earth's surface but when the sun's energy is re-radiated back into the atmosphere, the greenhouse gases trap much of this outgoing heat and warm the atmosphere up.
This is a natural process but over the last 100 years or so, the effect has been intensified by humans. The burning of fossil fuels and other activities have slowly raised the amount of greenhouse gases in the atmosphere and global temperatures have slowly risen.





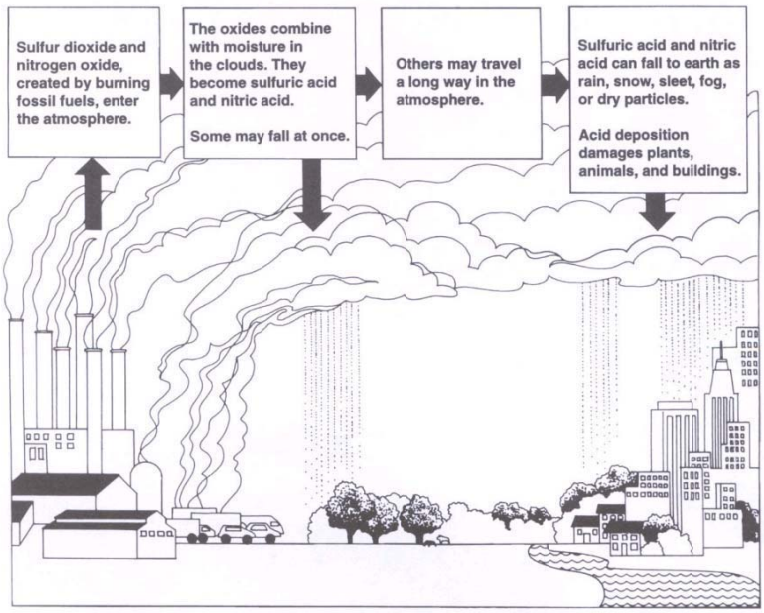


What are the Effects of Global Warming likely to be? (Positive and Negative)
No one is really sure how global warming will affect the planet but these points have been suggested(see maps above):-
Sea temperatures rise, the water would expand and **sea-level could rise by 0.25 to 1.5metres. Ice caps and glaciers melt** causing **sea levels to rise** even further. Low-lying areas would be flooded (eg much of Bangladesh near the coast would be at risk)
There might be more **violent storms** and **extremes** of hot weather, Hot regions would become hotter and **deserts might spread**. Climate belts and vegetation belts would shift towards the poles
Tropical diseases and insect pests may spread to more temperate areas
In Britain:-Maize, vines and even oranges could be grown in southern England
There could be **insufficient snow** in winter for the skiing industry in the Cairngorms (Scotland)
Sea defences would have to be raised and strengthened, especially in eastern England
Yields/area of cereals, potatoes, sugar beet and outdoor tomatoes would **increase**

What can be done to reduce global warming?
Nothing significant can be achieved without global cooperation but this has so far been difficult. Most greenhouse gases at present, are produced by MEDCs, especially the USA, but they claim that trying to do anything to cut greenhouse gases would be expensive and could lead to job losses. LEDCs are also reluctant to help to solve a problem that they did not create.
In 1997, the **Kyoto Protocol**, signed in Japan, brought agreement between countries that greenhouse gases should be reduced. So far, it has been difficult for the countries that signed to meet the targets although GB has committed itself to a large increase in wind power and other **renewables** over the next few decades
Renewable Energy – A power source that can be used sustainably (without running out), generally cleaner and less polluting. Examples include **Solar Panels, Wind Turbines, Bio-fuels, Wave power, Hydro-electric power and geothermal.**

Make sure you consider benefits and problems of these Renewables – eg visual and noise pollution from wind farms

Acid Rain – An issue of Global importance. This case study can be used in a number of areas, but generally looks at the causes, the effects on people and places and what can be done to prevent / reduce it.



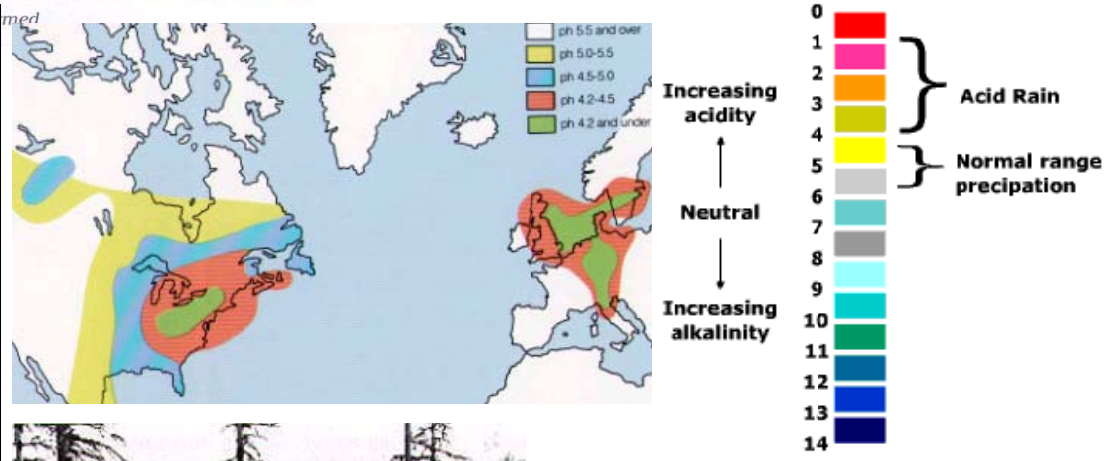
What is Acid Rain?

Acid rain is a term used to describe rainfall that has a higher than normal acid level. As shown on the Graph (below) all rain is slightly acidic, but as the map shows many places are now seeing record pH levels well above average.

What are the Causes of Acid Rain?

Acid rain is a type of air pollution mainly caused by power stations and industries burning fossil fuels which give off Sulphur Dioxide and Nitrogen Oxide. Car exhausts also add to the problem See diagram (left)

Why is acid rain a concern?
Acid rain is an **international problem** because it is blow across oceans and continents across political boundaries. The map shows countries that produce acid rain. Some, like UK, USA and Germany 'export' acid rain while other countries 'import' it. This makes solutions to the problem difficult to agree on as those that suffer the effects are not the one that cause them.



Acid rain withers trees in a coniferous forest in Europe.
Photo by The Ministry of Foreign Affairs of Japan

What are the consequences of Acid Rain?
Aquatic life (animals that live in water) will suffer. Acidified lakes and rivers will cause **fish** gills to become full of mucus and stop working causing death. **Plant life** here will also be poisoned by acid.

Stonework of buildings will be dissolved by the acid, especially if the building is made of stone such as Limestone (see pic of statue).

Forests are killed as acid attacks the leaves and photosynthesis slows down, and branches are thin and die off. Seedlings fail to grow. Roots are damaged and nutrients are washed out of the soil.

How can we reduce Acid Rain?
Short term solutions include spraying trees lakes and rivers with Limestone, as it is alkaline and helps to neutralise the acid. This is only TEMPORARY.

Long term solutions can be achieved in a number of ways, such as
Burning less fossil fuels and conserving energy to reduce sulphur in the atmosphere.
Use **renewable fuels** such as wind or solar energy.
Remove sulphur from gases using limestone scrubbers in chimneys to stop sulphur getting into the atmosphere.
Reduce **emissions from cars** by using unleaded petrol and low sulphur diesel.

River Tees– This case study can be used to explain the landforms that can be found along a river. It can also be used to explain how river processes (erosion and deposition) can affect people's lives and how people manage and use rivers.

Location:
The **Tees** rises on the eastward slope of Cross Fell in the Pennines at a height of about 750 m, and flows eastwards for about 85 miles (137 km) before emptying into the North Sea.
The Tees drains an area of 708 miles^2 (1834 km^2).

The Upper Course: is characterised by low discharge but high velocity. Much of the land is either open moor land and rough grazing, where the main land use it sheep farming. A series of reservoirs have been built to provide water for the industrial cities to the east; e.g. Cow Green reservoir on the R. Tees itself.

High Force waterfall: is one of the main features on the River Tees and is one of the highest waterfalls in the UK, and is is a major tourist attraction
The river flows over a layer of hard, basaltic (Volcanic) rock called Whinstone which is difficult to erode.
Underneath the Whinstone is softer limestone. The limestone erodes backwards, undercutting the Whinstone, which eventually collapses.
The river erodes a deep **'plunge pool'** at the base of the waterfall.
Debris from the waterfall helps erode the plunge pool and the undercut.
Over thousands of years the waterfall has eroded backwards, to leave a gorge downstream of High Force.

The Middle Course
Meanders: are major features of the middle course of the River Tees. . The flood plain either side of the river is very fertile and as a result is used for intensive agriculture. Settlement first developed within the meanders for defensive reasons: but this has restricted growth in recent times. The river has been used as navigation for many years. In some places the river has been straightened.

The Lower Course of the river opens into the **Tees Estuary**. There is a lot of deposition evidenced by mud flats at low tide. The land use either side of the river is industrial, with oil refineries, aluminium smelters and so on. The mud of the estuary is an important ecosystem, supporting a wide range of birds and other plants and animals. Pollution has always been a problem in the river, both domestic and industrial; but the river has become a lot cleaner as industry has closed down and both industrial waste and effluent has been controlled by the Government and the E.U.

HOLDERNESS COAST– This case study can be used to explain the landforms that can be found along the coast. It can also be used to explain how coastal processes (erosion and deposition) can affect people's lives and how people manage the coast to protect areas from the damaging effects of the sea.

Map of Holderness Coast.

Location: The Holderness Coast is one of Europe's fastest eroding coastlines. It is located on the North East coast of England. The average annual rate of erosion is around 2 metres per year. This is around 2 million tonnes of material every year. Under lying the Holderness Coast is bedrock made up of Cretaceous Chalk. However, in most place this is covered by glacial till deposited over 18,000 years ago. It is this soft boulder clay that is being rapidly eroded. The Holderness Coast is a great case study to use when examining coastal processes and the features associated with them. The area contains 'text book' examples of coastal erosion and deposition. The exposed chalk of Flamborough provides examples of erosion, features such as caves, arches and stacks. The soft boulder clay underlying Hornsea provides clear evidence of the erosional power of the sea. Mappleton is an excellent case study of an attempt at coastal management. Spurn Point provides evidence of longshore drift on the Holderness Coast. It is an excellent example of a spit. Around 3% of the material eroded from the Holderness Coast is deposited here each year.

LANDFORMS OF EROSION

CAVES, ARCHES, STACKS AND STUMPS

Flamborough is the headland that forms the most northerly point of the Holderness Coast.

The most striking aspect of Flamborough Head are the white chalk cliffs that surround it. The chalk lies in distinct horizontal layers, formed from the remains of tiny sea creatures millions of years ago. Above the chalk at the top of the cliffs is a layer of till (glacial deposits) left behind by glaciers 18,000 years ago, during the last ice age.

As the cliffs below are worn away by the action of the waves, the clay soil often falls into the sea in huge landslips. The sea attacks the coast around the headland in two ways. Waves beat against the vertical cliffs and, at the high water line, weak points in the chalk are worn away into caves. The weakest points are where vertical cracks or fault lines have appeared in the horizontal beds of chalk. At places on the cliffs where the chalk juts out, these caves are worn away into rock arches. If the top of an arch collapses, the result is a pillar of chalk cut off from the rest of the headland - this is called a stack. Flamborough Head has many caves and arches, as well as a few stacks. The process of erosion that has created them can take hundreds of years to do its work.

Processes at work along the coastline.

EROSION is waves wearing away the coast.

ABRASION is when waves pick up beach material (e.g. pebbles) and hurl them at the base of a cliff.

HYDRAULIC ACTION is when waves hit the base of a cliff air is compressed into cracks. When the wave retreats the air rushes out of the gap. Often this causes cliff material to break away

CORROSION is when certain types of cliff erode as a result of weak acids in the sea

ATTRITION is when waves cause rocks and pebbles to bump into each other and break up.

TRANSPORTATION & DEPOSITION

LONGSHORE DRIFT is the movement of material along the shore by wave action. Longshore drift happens when waves moves towards the coast at an angle. The swash (waves moving up the beach) carries material up and along the beach. The backwash carries material back down the beach at right angles. This is the result of gravity. This process slowly moves material along the beach. Longshore drift provides a link between erosion and deposition. Material in one place is eroded, transported then deposited elsewhere.

DEPOSITION is when eroded material is dropped by constructive waves. It happens because waves have less energy. Deposition creates a range of landforms.

HOLDERNESS COAST- PAGE 2

CAVES, ARCHES, STACKS AND STUMPS AT FLAMBOROUGH.

SPIT AT SPUN.

COASTAL MANAGEMENT.

There are 5 options that can be considered when managing an area of coastline.

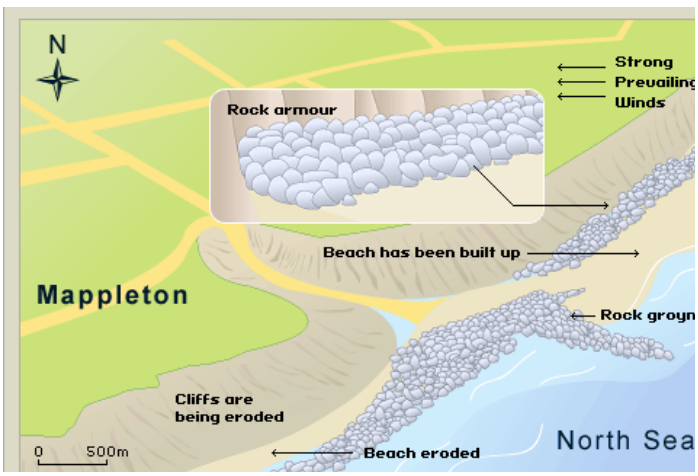
(1) Do nothing: Let the natural processes of erosion continue until a new balance is achieved. This is an unlikely option where coastal settlements exist or extensive flooding many result.

(2) Prevent and discourage: Planning controls can prevent further housing being built in vulnerable areas. Insurance companies many the cost of insuring property too high to be affordable.

(3) Managed retreat: Do not protect the present coast but defend it further inland. This may be possible in low-lying areas of farmland such as around the Wash estuary.

(4) Build 'hard' defences: Construct concrete sea walls, rock armour, revetments and groynes. These can be very expensive.

(5) Use 'soft' solutions: Build up beaches with sand dredged from many kilometres off shore called beach nourishment. This is expensive but the solution is efficient, economic, sustainable and attractive and likely to be the most favoured method of sea defence in the future. The tourist industry favours this option.



SPIT FORMATION AT SPURN.

The area known as Spurn forms the southern extremity of the Holderness coast and includes the unique feature of Spurn Head, a sand and shingle spit 5.5km long, reaching across the mouth of the Humber.

Spurn is made up of the material which has been transported along the Holderness Coast. This includes sand, sediment and shingle.

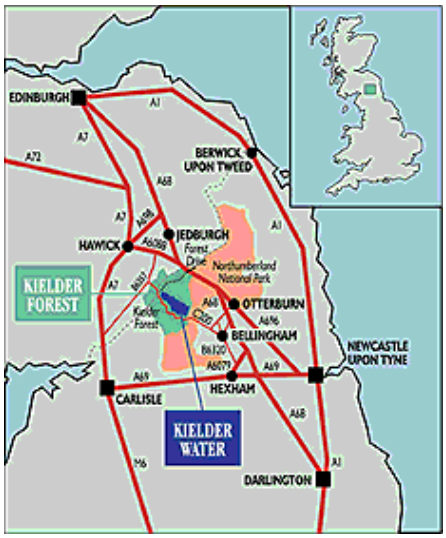
The spit forms a sweeping curve which continues the line of the coast. The sand which forms the spit has been transported along the Holderness Coast by longshore drift. The energy in the waves transporting the material reduces where the North Sea meets the Humber Estuary. As a result the material is deposited. This process is known as deposition.

COASTAL MANAGEMENT ALONG THE HOLDERNESS COAST.

The village of Mappleton is greatly underthreat by coastal erosion along the coastline and by 1998, the main road running through the village was only 500m from the cliff top and in places it is now only 50m. The village is under threat due to the easily eroded boulder clay (glacial till) which makes up the cliff line. The area suffers from erosion rates of up to 2m per year. To reduce the amount of erosion threatening Mappleton, 2 rock groynes were constructed in 1991 to encourage the build up of beach in front of Mappleton by trapping longshore drift. This meant that that waves would break on the beach rather than attacking the cliffs.

Those living south of Mappleton village have experienced the 'knock-on' effects of the coastal management.
The groynes at Mappleton have disturbed the natural longshore drift movement, trapping the coastal material.
Therefore whilst material is still being moved south of Mappleton, there is no fresh sediment to replace it.
Beaches have become even narrower and the cliffs are unprotected.
Estimates suggest that it has accelerated cliff erosion south of Mappleton to 10m / yr.

Kielder Reservoir – This case study can be used to talk about a **Water Resource Management Scheme**, and how it can affect people's lives and how people manage resources.



Location: Kielder Water, in the county of **Northumberland** in the **N.E of England.**

Location: Kielder Water is the largest man made lake in Europe. It is in N.E. England. It is about 40 kms north west of Newcastle.

Describe the Scheme:

Storage: This is the largest man made lake in Europe – it is a reservoir and is bigger than Lake Ullswater. The lake is 12 km long.It is the main reason why there are never any water shortages in Northumberland (unlike many other parts of England) even though the County as a whole is one of the driest in the country. There is a large forest around the reservoir and both the lake and the forest are used for tourism. The lake holds an amazing 200 billion litres of water to ensure the people and industry of the North East always have enough for their needs. Started in 1975 and finished in 1982. It cost £167 million.

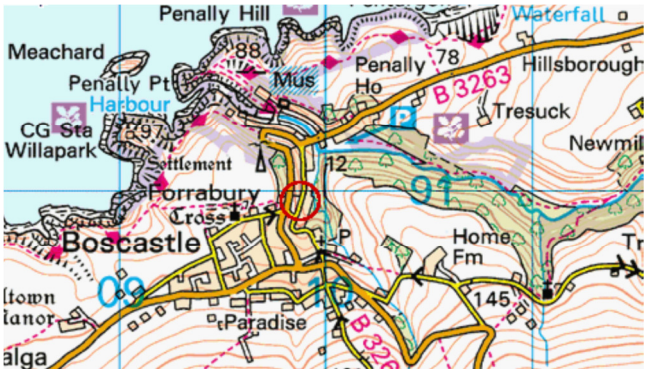
Supply: It forms part of the UK's first example of a regional water grid. Water released from the reservoir can supply Tyneside, Wearside and Teesside, over 80 miles away. There are pipelines taking the water from the Tyne where the reservoir is (to supply **Newcastle**), to the Wear which flows to **Sunderland** and then to the Tees which flows to **Middlesbrough**.

Why was it necessary? Back in the 1960s the thought the North East of England would run short of water because of all its heavy industries like steel making and ship building. By the time the scheme was built all these industries had closed. It looked like they had too much water supply. However, in the 1990s there was a drought in Yorkshire and they bought water from Kielder. It looked that the planners had been far sighted and met future needs. Some people still argue the scheme was a waste of money.

Good and Bad Points…

Good	Bad
Multi purpose scheme – water supply, flood control, tourism and forestry.	Flooded a beautiful valley – an area of Outstanding Natural Beauty.
Created jobs in tourism – big visitor attraction	Displaced farming communities
No problem of water shortage in NE England. Can sell water to other parts of the UK	Not really needed so a waste of money? The reservoir has never been less than 90% full.
Also generates HEP to supply homes and industry in the region.	One and a half million trees were cut down to make way for the lake.

Boscastle - This case study can be used to explain the human and Physical causes of flooding. It can also be used to explain how these extreme events can affect people's lives and how people try to manage areas to prevent it happening again.



Flash floods in Cornwall devastated the tourist village of Boscastle during August. The settlement was badly damaged leading to an extensive clear-up and on-going repair work, after heavy, intense rainfall caused local rivers to burst their banks.

Human Causes

The settlement of Boscastle has been allowed to develop on a narrow flood plain on the west coast of England, where rainfall is often high.

The rainfall hit at the worst time of year when the settlement population doubles to 2,000 as tourists arrive, many of who are following the South West Coast Path. Much higher levels of motor vehicle damage were also experienced, as a result of this influx. In addition, shops were carrying greater levels of stock than at other times of the year.

Although new flood defences were set to be built in October, work had not yet started. Overall, excellent emergency services and Environment Agency response meant no lives lost. However, due to the transient nature of the tourist population, it took a long time to clearly establish that there had been no fatalities.

The Causes

A hazard is a negative interaction between physical and human systems. The causes of a hazard therefore encompass:

The **physical factors** responsible (in this case, heavy rainfall and catchments characteristics that promote rapid surface run off) and the **human factors** that have brought people, knowingly or not, into an environment where they are now at risk.

Physical Causes

Three rivers – the Valency, Jordan and Paradise - converge on the village of Boscastle. The majority of the damage was attributable to the Valency.

Heavy rain was caused by extreme frontal activity. In total, an input of 3 million tonnes of water was added to a tiny drainage basin, whose size is just 40 square kilometres.

Attention must be paid not just to the total *volume* of rain but also the *intensity* with which it fell. 185mm arrived in just five hours, the majority falling in the first two hours. Under such conditions, infiltration-excess overland flow is inevitable, with the rate of input of rainwater greatly exceeding the infiltration capacity of any soil type.

The soils were already saturated from previous rainfall earlier in the week, encouraging overland flow to begin even sooner.

The three river valleys are very steep and narrow. A broader floodplain would have helped to soak up excess water and to dissipate energy more effectively (through an increased hydraulic radius).
The steep valley sides mean that soils are thin, as a result of mass movement, with limited storage capacity.

The parent material is old, hard sandstone with limited permeability. The rivers here are naturally flashy.

Surrounding vegetation includes agricultural land with limited interception storage, although there is some forestry along the riverbanks. (So conditions would have been even worse, without these patches of woodland!)

The rain coincided with high tide in the bay. This restricted the rate of exit of floodwater into the harbour.

The Effects

Economic losses Much of rural Cornwall is classified as a deprived region. It is one of the UK's poorest rural counties. A victim of early de-industrialisation, the region's mining industries are now long-gone leaving it over-dependent on tourism. Luckily, a strong association with Arthurian legends and with the writer Thomas Hardy has helped foster high visitor-numbers for Boscastle. However, most shops will now stay shut for the rest of the season and the bad publicity is likely to reduce tourist numbers during future years, resulting in a negative multiplier effect for the entire local community.

Wider regional impact In addition, the effect may spread beyond Boscastle if other river-line settlements are perceived to be at risk by tourists. Boscastle businesses can claim compensation from their insurance companies (claims for 'disruption to trading' in Boscastle could amount to £15m). However, others businesses elsewhere-in Cornwall cannot, even though they too may suffer reduced trade next year. This is a cause for concern, with tourism accounting for 30% of Cornwall's GDP. The population doubles during July and August each year, with tourists spending up to £1 billion throughout the county.

House price falls People will find the value of their homes permanently reduced, now that Boscastle is associated with a serious flood risk. It has been suggested that values have halved. In many cases it was six months before properties were sufficiently repaired for homeowners to permanently return to their homes.

Health and Safety legislation also required that 76 up-ended cars, masses of uprooted trees and sewage-contaminated silts needed to be moved from the village streets before they could be re-opened to the public. The historic character of the houses in Boscastle is likely to cause extra problems. Many are Grade II Listed buildings, which means that repairs will take even longer, as restoration will require specialist attention.

Heavy property damage Six properties were destroyed outright. Most others will require between £15,000 and £30,000 for repairs. Some home and car owners will not receive compensation if (a) they lack insurance cover or (b) they find that they are not entitled to payment because insurers regard this unusual event as an 'Act of God'.

Infrastructure disruption Both bridges in the village were destroyed and sections of road have been swept away. Telephone, water, electricity and gas supplies were all immediately interrupted.

Irreplaceable **loss of historical artefacts** The 'Witch Museum' – which is fifty years old and receives 50,000 visitors a year – has seen some of its unique contents damaged.

FLOODING IN BANGLADESH – This case study can be used to talk about the causes, effects and responses to flooding in an LEDC (less economically developed country). Causes can be climatic (monsoon) and physical (low lying land) etc. Effects can be positive and negative, upon people, the economy and the environment, and the responses can be immediate (to help minimise deaths etc) or over the long term to help prevent further flooding.

Location

Bangladesh lies south of the Himalayas, surrounded by the country of India and the Bay of Bengal. 80% of the country is low-lying flood plain and delta. It is on the continent of Asia.

Positive Effects:

- The rice fields were flooded, so that the crops can grow. Also, when the water flows it creates friction so some of the energy of the water is lost. This means that rich fertile soil is deposited providing nutrients for the crops.
- Silt creates land for people to live on.
- Usually, the inhabitants of Bangladesh rely on at least 20% of the country to be flooded each year to maintain the ecological balance. It provides water for their essential crops of rice and jute, and it deposits silt which fertilises their fields. The main crop of rice is reliant upon the arrival of the monsoon rains as a large amount of water is required to

Negative Effects

- Deaths: 1,300
- Homes destroyed: 7 million
- Homeless: 25 million

- The flood affected two-thirds of the population, and was so deep in some places that only the tops of the trees could be seen. In the capital, Dhaka, the water was two metres deep and covered three-quarters of the city. The electricity supply was lost for several weeks, and the water was polluted, leaving no safe drinking water. This caused several deaths from disease, although the most common cause of death was drowning. Illnesses such as diarrhoea and vomiting, malaria, typhoid and cholera are all easily spread through a contaminated water supply. These would all be curable in a MEDC, but lack of doctors and supplies in LEDC's often results in many people dying from them.
- Food was also scarce during and after the flood, as a large amount of the year's crop yield was lost, as were a lot of cattle and poultry. Roads and railways were flooded along with Dhaka's international airport, and many bridges were destroyed. This made it very difficult to deliver emergency food and medical supplies to those who needed it most.

Immediate Response by International Aid Agencies.

- Rescue and evacuation;
- Water purification tablets;
- Oral saline;
- Food (rice, high-protein biscuits, grains, salt, pulses and vegetables);
- Medical supplies (for diarrhoea, pneumonia, snake bites, sanitary towels);
- Non-food items (saris and lungis, cooking sets, candles and matches);
- Fodder;
- Tube well extensions.

Flood/River management and programmes:

- Flood action plan (FAP) – scheme that contains 26 action points which together provide a long term solution to the country's serious flooding problem
- Built 5000 flood shelters at the areas' most at risk – they are cheap and easy to construct and would provide a place of safety for almost everyone.
- Improved the flood forecasting system using satellite and computer technology.
- Prepare flood disaster management plans which provide early warning and clear effective instructions of what people should do before, during and after a flood.
- Dams are built to control river flow and hold back monsoon rain water in reservoirs. The water used for irrigation and generating electricity. This cost more than five hundred million pounds.

Causes

- Bangladesh has a monsoon climate, making heavy amounts of rain for four or five months a normal occurrence. The heavy rainfall in the months of July and August causes the rivers Brahmaputra and Ganges to become full and overflow.
- These rainy months are also the warmest of the year, which causes the glaciers of the Himalayas to melt and increase the amount of flooding.
- Deforestation (the cutting down of trees) around the mountain range has also increased runoff, as less water is intercepted by the trees leave and less is drawn up by the trees roots.
- Badly-planned urbanisation also contributes to flooding as replacement of permeable (allow water to pass through) surfaces with impermeable surfaces leads to increased and rapid run off into the rivers and a decrease in lag time.
- Most of the country's population, 125 million live on the flood plains.
- Silt deposited in the river mouths during times of high flow, block the river channel and therefore the river floods more rapidly.

Example Case Study Question.

(i) **Name** and **locate** an area where flooding has occurred in a MEDC or an LEDC.

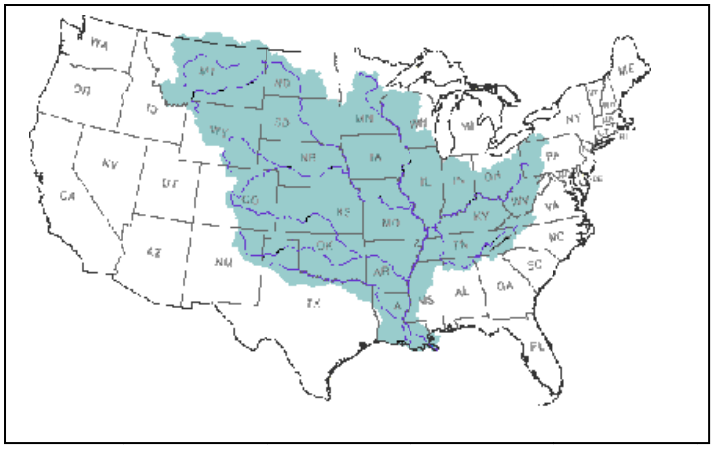
(ii) **Describe** the **causes** of the flooding.

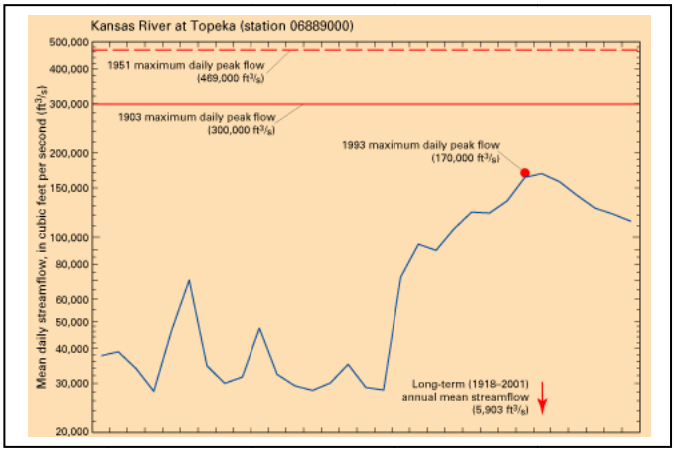
(iii) **Explain** how the floods **affected** the **people** and the **environment.**

(iv) **Explain** what could be done to **reduce the effects** of the flooding.

FLOODING IN USA – This case study can be used to talk about the causes, effects and responses to flooding in an MEDC (more economically developed country). Causes can be climatic and physical. Effects can be positive and negative, upon people, the economy and the environment, and the responses can be immediate (to help minimise deaths etc) or over the long term to help prevent further flooding.

Location: The Mississippi River runs across ten US states on its 3800km course. Its drainage basin covers one third of the USA as well as a small part of Canada. It has many tributaries including the Missouri which it joins near St. Louis. The states include **Minnesota, Wisconsin, Iowa, Illinois, Missouri, Arkansas, Tennessee, Mississippi, Louisiana** and **Kentucky.**





Causes: Heavy amounts of precipitation

July 1993, in St Louis, **180mm of rain fell over just a couple of hours**. The rainfall was **over two inches** above the monthly norm. Levees that surround the towns were put under tremendous pressure due to increased volumes of water, in many places causing the collapse of such levees.
Portions of east-central Iowa received as much as **48 inches (1,200 mm)** of rain between April **1 and August 31, 1993**, and many areas across the central-northern plains had **400-750%** above normal precipitation.
Another Levee was broken as a result of man-made breakages- in the removal of sandbags. This led to 14000 acres of farmland with buildings to be destroyed, however this incident seems minor as **more than 1,000** levees failed in total. The area is very low lying and therefore more susceptible to flooding. The levees prevent flood water from flowing back into the rivers once the waters begin to recede.

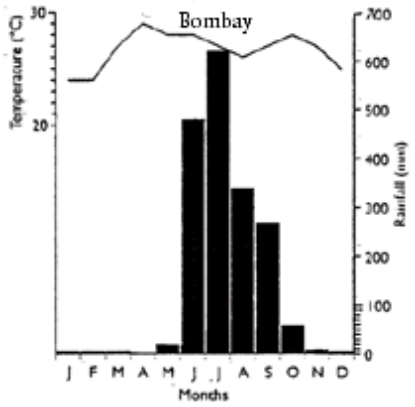
Effects: when the levees broke, it flooded an area of 26,000km squared, larger than the British Isles.
The Missouri River was above flood stage for 62 days in Jefferson City, Missouri, 77 days at Hermann, Missouri; and for 94 days at St. Charles in the St. Louis metropolitan area. On October 7, 103 days after it began, the Mississippi River at St. Louis finally dropped below flood stage. Approximately **10,000** homes were destroyed as a result of the flooding, with **15 million acres (60,000 km²)** of farmland inundated, and the whole towns of Valmeyer, Illinois and Rhineland, Missouri were relocated to higher ground. The floods cost **thirty two lives officially**; however, a more likely target is suspected to be around fifty people, as well as an estimated **15-20 billion dollars** in damages of which **$2.46 billion** came as a result of damage to crops.
In total, **50 000** were evacuated.

Response: Levees were raised and strengthened. Special barge backs were designed, that consisted of concrete blocks 25m x 8m were positioned off-shore and covered from the deepest point of the river to above the flood level. Many trees have been planted in the northern reaches. This helps to reduce run-off and slow the flow of the river.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

<u>A TYPE OF CLIMATE</u> – Watch the information that describes the Monsoon **Climate** and its effects on people.

Answer the questions below using either, info from the video(s) or your knowledge about the Indian Monsoon using the case study booklet.

1) Describe the location of the Monsoon climate?	
2) Describe the Monsoon **climate**  	
3) Why do the monsoon rains happen during the summer months?	
4) How are people **positively** affected by the monsoon climate?	
5) How are people **negatively** affected by the monsoon climate	

CASE STUDY: A type of climate

(i) Name a type of climate you have studied.

(ii) Name a place where this type of climate can be found.

(iii) Describe the main features of this type of climate. Refer to the whole year.

(iv) Explain how **plants and wildlife** OR **different groups of people** are affected by this type of climate.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

Savannah Ecosystems – Answer the questions below using either,information from the DVD, Factsheet of or your knowledge about Savannah ecosystems (biomes).

1) Describe the location of Savannah ecosystems. What are they?	
2) Describe the climate and Vegetation of the Savannah in DETAIL.	
3) How has a growing population in the Serengeti (and other areas) changed the Savannah	
4) How have humans negatively impacted on these areas (Tourism)	
5) How have humans positively impacted on these areas (Tourism)	

CASE STUDY: The effects of people on an ecosystem.

(i) Name and locate an ecosystem you have studied.

(ii) Describe the structure of the ecosystem. Refer to plants and animals. Draw diagrams if you wish.

(iii) Explain how and why people are changing (or have changed) the ecosystem structure.

CASE STUDY: An ecosystem that is being used in an unsustainable way.

(i) Name a place where you have studied an ecosystem that is being used in an unsustainable way by people **or** organisations.

(ii) Name the type of ecosystem you have studied.

(iii) Describe how people **or** organisations are using this ecosystem.

(iv) Explain why this makes the ecosystem **unsustainable**.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.
<u>Global Warming – An Issue of Global Importance</u> – Watch the video clips that describe Global Warming, some of its causes, hazards and solutions.

Answer the questions below using either, your own notes in your book, notes from the video, the revision booklet.

1) What is Global Warming?	
2) What are the causes of Global Warming?	
3) Why is Global Warming an international concern?	
4) What are the consequences of Global Warming? (**Environmental** and **Human**)	
5) What are the solutions to the Global Warming problem? Are they successful?	

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Global Warming.
(ii) Describe the causes.
(iii) Explain how the issue affects different groups of people and/or organisations.

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Global Warming.
(ii) Describe the causes.
(iii) Explain how the issue affects people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

ACID RAIN – An Issue of Global Importance – Watch the video clips that describe acid rain, some of its causes, hazards and solutions.

Answer the questions below using either, your own notes in your book, notes from the video, the revision booklet.

1) What is Acid Rain?	
2) What are the causes of Acid Rain?	
3) Why is Acid rain an international concern?	
4) What are the consequences of Acid Rain? (**Environmental** and **Human**)	
5) What are the solutions to the Acid Rain problem? Are they successful?	

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Acid Rain.
(ii) Describe the causes.
(iii) Explain how the issue affects different groups of people and/or organisations.

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Acid Rain.
(ii) Describe the causes.
(iii) Explain how the issue affects people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

<u>HIGH PRESSURE Weather Event</u> – Watch the DVD that describes an extreme summer and its hazards.

Answer the questions below using either, notes from the video, the revision booklet or handout.

1) Describe the location of the Heatwave	
2) Why did the Heatwave occur?	
3) How did the weather event affect people?	
4) How did the weather affect the environment	
What were the responses to the event? Were they successful?	

CASE STUDY: A weather event caused by high pressure.
(i) Name and locate a weather event that has been caused by a **high pressure weather system**.
(ii) Describe the weather event.
(iii) Explain how the weather event affected different groups of people and/or organisations.

CASE STUDY: A weather event caused by high pressure.
(i) Name and **locate** a weather event that has been caused by a high pressure system.
(ii) Describe the weather event.
(iii) Explain how the weather event affected people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.
<u>LOW PRESSURE Weather Event</u> – Watch the DVD that describes hurricanes (Tropical storms) and their hazards.

Answer the questions below using either, Hurricane Andrew (Ivan if time) from the video or your knowledge about Hurricane Katrina using the case study booklet.

1) Describe the locations where Hurricanes (Tropical storms are found). Why are they found here?	
2) Describe how Hurricanes form (use a diagram if you wish)	
3) Facts and figures about hurricanes	
4) What dangers do Hurricanes bring? **NATURAL**	
5) What problems do Hurricanes cause? **HUMAN**	

CASE STUDY: A weather event caused by low pressure.
(i) Name and locate a weather event that has been caused by a **low pressure weather system**.
(ii) Describe the weather event.
(iii) Explain how the weather event affected different groups of people and/or organisations.

CASE STUDY: A weather event caused by high pressure.
(i) Name and **locate** a weather event that has been caused by a high pressure system.
(ii) Describe the weather event.
(iii) Explain how the weather event affected people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

Ecosystems – Watch the DVD that describes rainforest ecosystems and their use.

Answer the questions below using either, Costa Rica and Ghana from the video or your knowledge about rainforests using the case study booklet.

1) Describe the location and climate of the rainforests. Why are they found here?	
2) Describe the structure and plants found in the rainforest	Ground Layer – Shrub Layer – Under Canopy – Upper Canopy – Emergent Layer –
3) What types of adaptations do plants and animals have to help them survive?	
4) How do people use the rainforest **SUSTAINABLY**?	
5) How do people use the rainforest **UNSUSTAINABLY**?	

CASE STUDY: The effects of people on an ecosystem.

(i) Name and locate an ecosystem you have studied.

(ii) Describe the structure of the ecosystem. Refer to plants and animals. Draw diagrams if you wish.

(iii) Explain how and why people are changing (or have changed) the ecosystem structure.

CASE STUDY: An ecosystem that is being used in an unsustainable way.

(i) Name a place where you have studied an ecosystem that is being used in an unsustainable way by people **or** organisations.

(ii) Name the type of ecosystem you have studied.

(iii) Describe how people **or** organisations are using this ecosystem.

(iv) Explain why this makes the ecosystem **unsustainable**.

Theme 3 - Case Studies for: People, Work and Development.

The following case studies can be used to answer the final 'case study' question in your examination. These questions are from THEME 3 – People, Work and Development.

USA, Brazil – Trade

Azerbaijan, Thailand – Aid

South Wales – Lucky Goldstar MNC (Multi National Company)

Cambridge – Science and Business Parks.

Toyota in Derby – Location of Industry

Rainforests – Sustainable/Unsustainable use

Global Warming and Acid Rain – Issues caused by Development (industry)

A country that trades with other countries. (2007)

(i) Name a country that trades with other countries.
(ii) Describe this country's main imports and exports.
(iii) Explain the advantages **and** disadvantages of the trade for this country.

The location of an economic activity. (2007)

(i) Name and **locate** an economic activity.
(ii) Describe the location of the economic activity. You may draw a sketch map.
(iii) Explain the advantages and disadvantages of the location of this economic activity.

A country that has received Aid. (2006)

(i) Name a country that has received Aid.
(ii) Describe the type of Aid received by this country.
(iii) Explain the extent to which the country has benefited from this Aid.

A location where a Multi-national company (MNC) has created employment opportunities. (2006)

(i) Name a location where a MNC has created employment opportunities.
(ii) Describe the direct and indirect employment opportunities that have been created.
(iii) Explain why the MNC located at this place. You may wish to draw a sketch map to help.

A country that trades with other countries (2004)

(i) Name a country that trades with other countries.
(ii) Describe this country's pattern of trade.
(iii) Explain how this country is affected by this trade.

The location of new job opportunities (2002)

(i) Name a place where new job opportunities have been created.
(ii) Draw a labelled sketch map to show the location of this place.
(iii) Explain why the new job opportunities were located in this place. You may annotate your map to show this.

Overseas investment in a More Economically Developed Country (an MEDC). (2002)

(i) Name a More Economically Developed Country you have studied.
(ii) Describe the nature of the overseas investment in the MEDC.
(iii) Explain how the overseas investment has affected **people** and the **environment** in the MEDC.

USA – This case study can be used to talk about trade. You will usually be asked to discuss how the country is affected by trade and what patterns there are. The USA is a very successful trading nation and so a very good example to use.

Exports

The USA is the worlds second largest exporter of goods. Most of these are manufactured or industrial products of high quality.

Imports

The USA is the world's largest importer of goods from abroad. 62% of these are manufactured goods.

Industries

Some of the world's largest TNCs are based in the USA such as Ford, Coca Cola, Microsoft and Colgate.

Trade links

The USA is in a trading bloc with Canada and Mexico (NAFTA) . These three countries have agreed special deals between them to encourage trade.

In addition to its NAFTA trading partners, Japan, China and Germany are the USA's largest trading partners. This means it has huge links with Asia and Europe as well as North America.

Other key factors;

- **Natural Resources** – eg mineral deposits, 5% of the world's forests, crude oil and coal.
- **Natural Resources** – agriculture.
- **Communications** – airports and roads.
- **Climate** – Temperate climate with adequate precipitation for agriculture.

Trade deficit – When a country imports more than it exports.
Trade Surplus – When a country exports more than it imports.
Trade balance – The difference between a countries imports and exports.

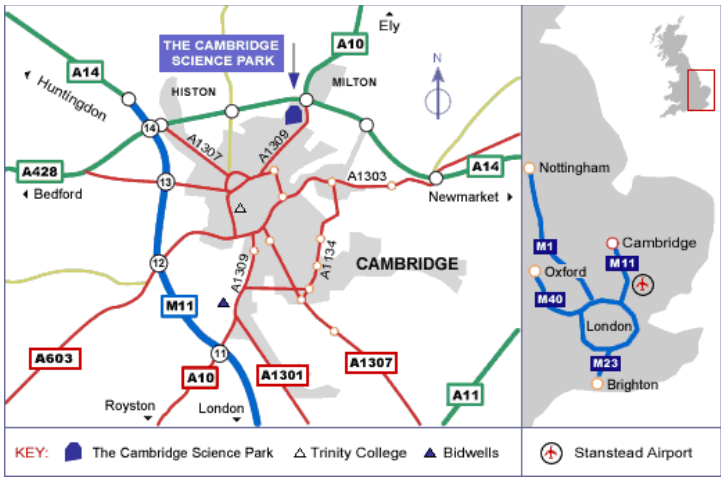
Case Study – Mattel (American TNC).

Mattel is the world's largest toy company in terms of profit. It employs 30,000 people in 43 countries in 5 continents and sells products in 150 nations.

- HQ California - Customer markets – Western Europe & USA - Production Asian Countries (NICs)

To keep costs down parts for the Barbie doll are manufactured in China, Indonesia, Japan and Taiwan, before they are sent to a fifth country to be assembled - Making this a global product. Raw materials and labour costs are cheaper in NICs compared to the USA.

Barbie is one of hundreds of Mattel products. The others are made in a similar way in order to reduce production costs. Breaking up production into several stages is known as fragmentation.



Location Factors:

- Large flat Greenfield site on edge of city.
- Room for further expansion.
- Attractive site creates good image.
- Highly qualified and skilled workforce available.
- Close links with Cambridge University.
- Close to M11 and M25.
- Near to Stansted airport for international links.
- Good leisure facilities in Cambridge.
- Pleasant housing and open space nearby.

Main Features:

- Established in 1970 on 50 acres of derelict land owned by Trinity College.
- The work of the companies based there ranges from the research and development of medical products such as animal vaccines and kidney dialysis machines to computers and lasers.
- All companies have a high level of investment and use the latest processing techniques.
- Over 150 companies are now located there.
- Over 3000 people are employed in the park.
- Most employees are university graduates.
- The park has had a positive multiplier effect in the area. Other new businesses have been able to develop away from the park.

Companies include:

- **Kodak –** focusing on researching health imaging.
- **The NHS –** focusing on researching using IT in the NHS.
- **Toshiba –** researching computer technologies.

Key Words:

Science Park – An estate of modern offices and high-tech industries having links with a university.

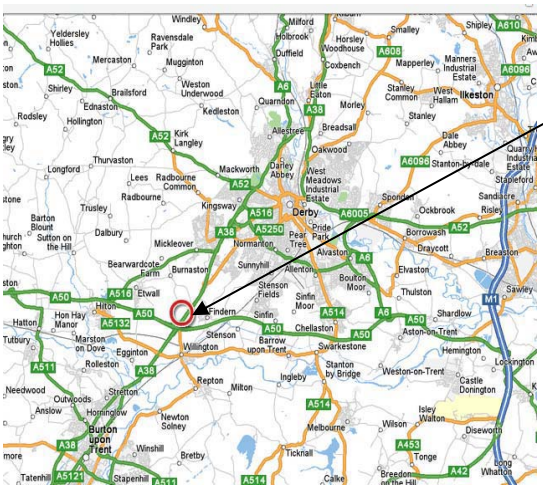
Business Park – A group of new offices or modern factories built in pleasant surroundings, usually on the edge of a city.

Greenfield site – An area of land that has not previously been built on.

Negative Impacts;

- The increasing population has caused house prices to rise making it difficult for local people to buy and forcing new houses to be built on Greenfield sites.
- There has been a significant rise in congestion – 75% of employees drive to work.
- Of the thousands of jobs at the park, the majority are for graduates.

TOYOTA – BURNASTON, DERBY: This case study can be used to talk about new job opportunities provided by MNCs/TNCs and overseas investment in a More Economically Developed Country.



What are the key location factors of Burnaston?

- Large area of flat land available.
- Greenfield location with room for expansion.
- Central to the UK domestic market.
- Many skilled workers nearby.
- Close to West Midlands where many car parts suppliers are located.
- Easy access to M1.
- National rail network nearby.
- Attractive countryside, pleasant villages and good amenities nearby.
- Government support available.

Why did Toyota decide to locate one of its factories in the UK?

- Large domestic market.
- Long tradition of vehicle manufacturing.
- Skilled and flexible workforce.
- Many firms already making car components.
- Good communications with the rest of Europe.
- Government support at local and national levels.

Positive changes.

1. **Boost to industry –** more money spent in shops and new houses built creating even more jobs. This is known as the **multiplier effect.**
2. Toyota sponsors local education, cultural and leisure activities.
3. Over 2,500 new jobs created.
4. New engineering and car component firms move to the area.
5. Electricity and water companies gain new contracts to supply the factory.

Negative Changes.

1. Farmland lost.
2. Number of vehicles in area increased.
3. Pollution and waste (but the firm has pledged to keep these to a minimum.

Key Words.

Transnational/Multinational Organisations – A large company which, by having factories and offices in several countries, is global because it operates across national boundaries.

Linkage - What is made in one industry is used by another and this links the industries together. This means that firms depend on one another and difficulties in one will affect the other.

AZERBAIJAN

Location:

Azerbaijan is one of three countries that makes up the Caucasus Republics, these countries are found where Europe meets Asia.

MEDCs are providing aid and technical assistance to countries like Azerbaijan, which contain many underdeveloped resources and huge, but poor populations.

- Surplus cereals from the EU have helped overcome food shortages.
- EU funding has been used to mend railway lines.

With low levels of **economic development** and the collapse of the Soviet Union Azerbaijan is relying on aid from MEDCs to improve its **standard of living**.

Loans and assistance from the *International Monetary Fund* and the *EU Technical Assistance to the CIS* scheme have helped the country progress.

THAILAND – Emergency aid for the Asian Tsunami.

On 26 December the 2004 Indian Ocean earthquake, struck off the northwest coast of the Indonesian island of Sumatra, it spawned a tsunami that wreaked havoc along much of the rim of the Indian Ocean. Particularly hard-hit were the countries of India, Indonesia, Sri Lanka and Thailand. 225,000 people were killed, tens of thousands more were injured and 10 million were made homeless.

Emergency Aid

Emergency Aid was sent directly to the affected countries in the form of medical supplies, water purification equipment, personnel to hospitals and medical centres, tents and shelters, clothing and food, particularly baby food. Some governments also donated body bags to assist in the safe disposal of corpses.

Many countries donated money to the charities that were working in the affected areas, this included $795 million from the UK and $2,825 million from the USA. The British government also sent military vehicles to help with the movement of supplies etc.

SOUTH WALES – This case study can be used as an example of new job opportunities and the location of an economic activity.

Luck Goldstar – Located a new development in South Wales.

Why did LG decide to locate one of its factories in South Wales?

- The government provided £180 million in incentives.
- They could be closer to their customers in Europe and avoid paying import taxes to Europe. (avoid trade barriers).
- There were plenty of skilled workers available.
- The area had plenty of flat land to build on.
- The site has good transport links – it is near the M4 and M5, and close to major sea ports.

What were the benefits to the local people?

- Creation of 6000 job.
- Investment of £1.7 million into South Wales.
- Boost to local economy – multiplier effect.

Why did it all go wrong?

There was a crash in the Korean markets.

LG failed to keep up with the development of new products and was not able to produce the new more popular flat screen TVs at its factory.

How did this affect South Wales?

Nearly 1000 of the new jobs were lost.

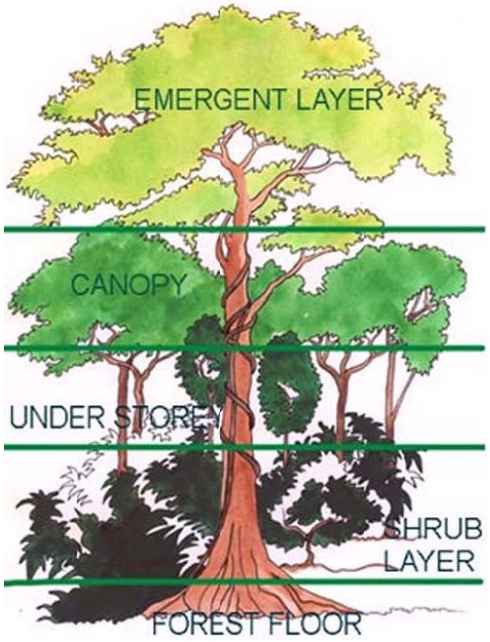
The tax payer was severely out of pocket.

A model answer

For a named country or region you have studied - describe how overseas investment has affected employment opportunities.

Lucky Goldstar (LG) is an electronics firm based in South Korea and is a multi-national company (MNC). In the mid-1990s it started to build 2 large factories in Newport, South Wales. The factories make components for TVs and PC monitors. LG invested £1.7 billion in the area and were attracted by £180 million of incentives and subsidies from the Welsh Development Agency (WDA). The jobs they created – approximately 2000, although 6000 were originally promised – have improved wages in an area badly affected by the decline of the steel and coal industry. These jobs are mainly secondary and tertiary jobs, manufacturing the parts for TVs and PCs. They are low to medium skilled jobs and have improved the standard of living for people in the area. It has attracted other businesses, creating many indirect jobs (the Positive Multiplier Effect).

Rainforests - This case study can be used to talk about an ECOSYSTEM. You usually need to discuss where the ecosystem is, the plants and animals, and how the environment has been changed and the impacts on/by people.



Describe the structure of the ecosystem. (You will often be given the choice to draw a diagram for the part of the case study question)
The Rainforest is divided into **5 main layers** each with different characteristics: (See diagram left)

Descibe the main features of this ecosystem.

The Litter Layer (or forest floor) – This is the layer where leaves etc that fall to the ground will **decay** and be broken down to supply **nutrients** for the forest to grow. This layer is home to large numbers of **insects (beetles and termites), fungi** and a few **small mammals**.

The Shrub Layer – This layer is between the ground and 10m high and is made up of smaller plants, bushes and shrubs, where there is little sunlight. This layer is home to **Pythons**, **frogs** and **insects**.

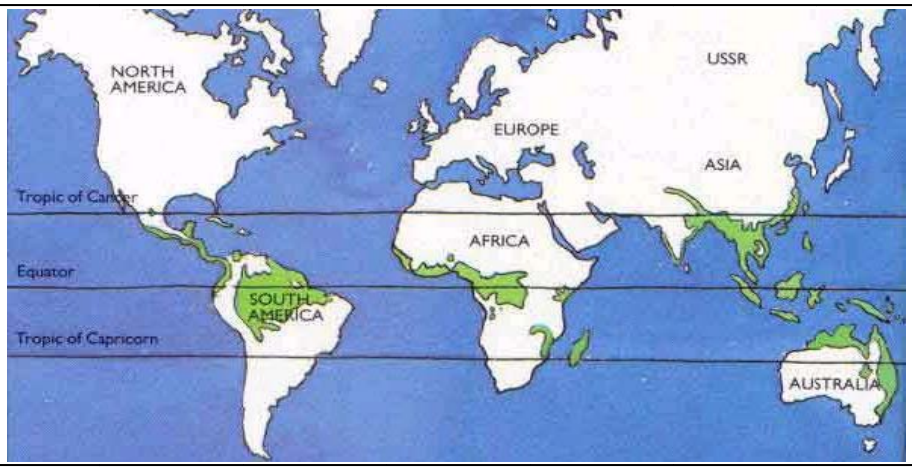
The Under Canopy (storey) – This layer is made up of **young trees** which are growing towards any light coming through the Canopy layer 10-20m. **Monkeys**, **insects Tarsiers** habitats are here.

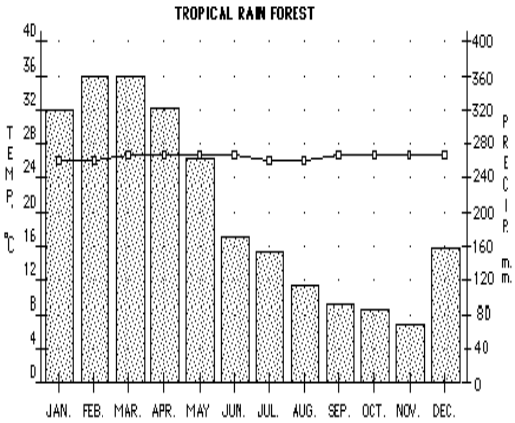
The Canopy – A continuous layer of tree tops (much of the rain is **intercepted** here) around 30m high. Home to **parrots**, **gibbons bats** and **insects**.

The Emergent Layer – The tallest of trees, 40m+, found scattered above the canopy and home to birds e.g **Hornbills** and other birds of prey.

Describe the location of the Rainforests.
The map (right) shows the locations of the world's rainforests. They are generally located along the **Equator** between the **Tropic of Capricorn** (23°S) and the **Tropic of Cancer** (23°N) – **The TROPICS**, hence the name **Tropical** rainforests.

They are found in S. America, Africa Indonesia, Australia, Malaysia and parts of Asia.





The rainforest climate
Temperature – Temperature range is between 2 and 3°C (No seasonal difference)
Precipitation – Its is very wet all year round, although there is a slightly drier and a slightly wetter season (see climate graph for Amazon, left).

SUSTAINABLE – the use and management of a resource so that it is maintained and can be used by **future generations**.
UNSUSTAINABLE – Present use means the resource will run out and not be replaced

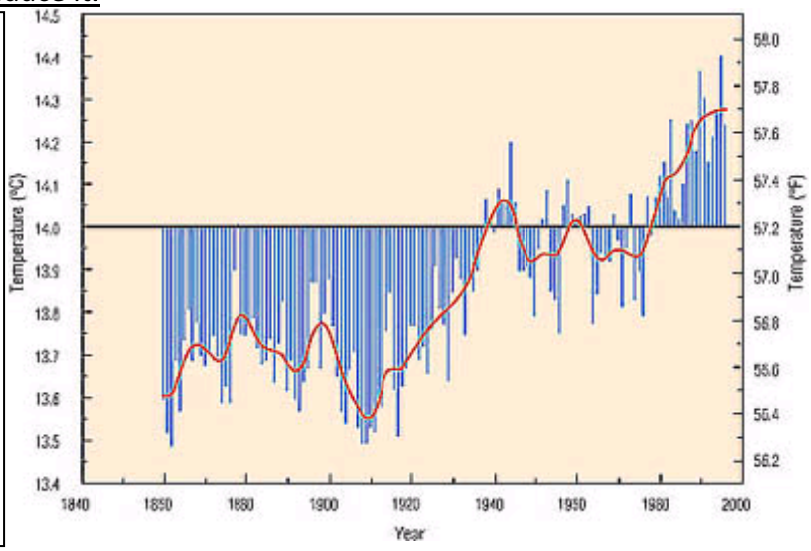
Plant adaptations
Tall, straight trunks, smooth barks, spear shaped leaves with drip tips
Canopy at 40m traps 90% of light and 80% of rain.
Buttress roots keep plants stable, climbing plants feed off of trees (lianas and strangler figs).
When trees fall allowing light through to floor, stimulates rapid growth as trees compete to reach the canopy.
Epiphytic mosses and lichen grow on other vegetation (don't grow in soil)
Too much water can rot vegetation so plants have waxy leaves, smooth barks and drip tips to shed water..

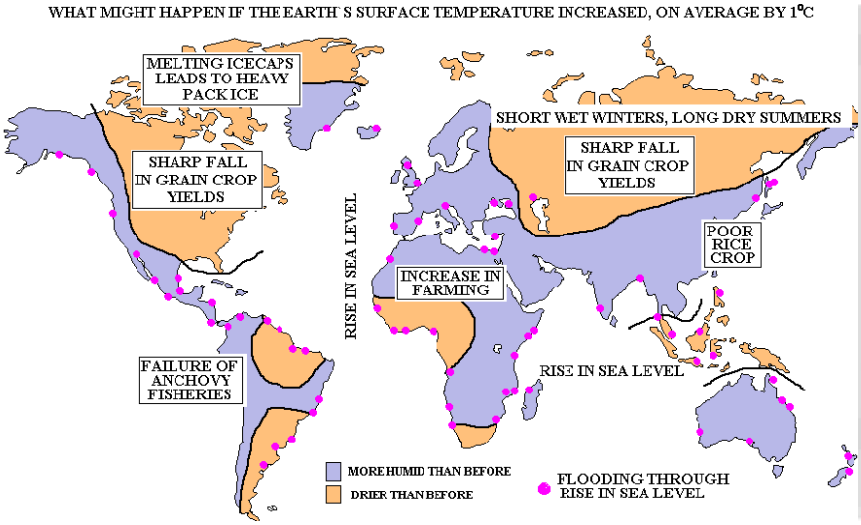
Uses of the forest
SUSTAINABLE uses include**, Shifting cultivation** – tribes clear small plots and farm for 3-4 years before clearing another patch and letting the first regenerate . Requires large areas to support small numbers of people. People able to gather materials to meet all needs, (clothing, food, shelter and medicine). **Sustainable farming** planting crops under the trees – banana and cocoa crops for money & other crops for food. **Selective logging** – small scale farming only removes mature trees and no other damage or road building. **Ecotourism –**Kakum National Park Ghana with aerial walkways to minimise impact *'Take nothing but photos leave nothing but footprints'*. Ex-poachers also employed as guides to protect wildlife.

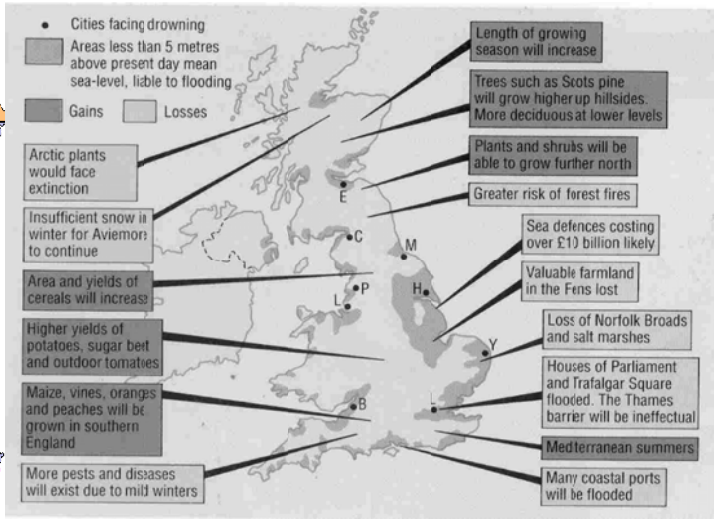
UNSUSTAINABLE uses include slash and burn for **Cattle Ranching,** as the soils in the rainforest have few nutrients and more and more land has to be cleared to support only a few animals. **Timber** production as roads and other trees are cleared to get to just a few mature trees e.g **Mahogany**. **Mining** which removes the forest on a large scale and does not allow forest to re-grow. **HEP** where areas are dammed and flooded to generate electricity.

Global Warming (Climate Change) – An issue of Global importance. This case study can be used in a number of areas, but generally looks at the causes, the effects on people and places and what can be done to prevent / reduce it.

What Causes Global Warming?
Although the Earth's atmosphere contains mainly nitrogen (78%) and oxygen (21%), there are other gases in small amounts that have a large influence on atmospheric temperature.
Carbon dioxide is the most important of these but there are other ones such as **Methane** and **CFC's** . These gases act a bit like the glass in a greenhouse. They let the radiation from the sun pass through them to reach the earth's surface but when the sun's energy is re-radiated back into the atmosphere, the greenhouse gases trap much of this outgoing heat and warm the atmosphere up.
This is a natural process but over the last 100 years or so, the effect has been intensified by humans. The burning of fossil fuels and other activities have slowly raised the amount of greenhouse gases in the atmosphere and global temperatures have slowly risen.





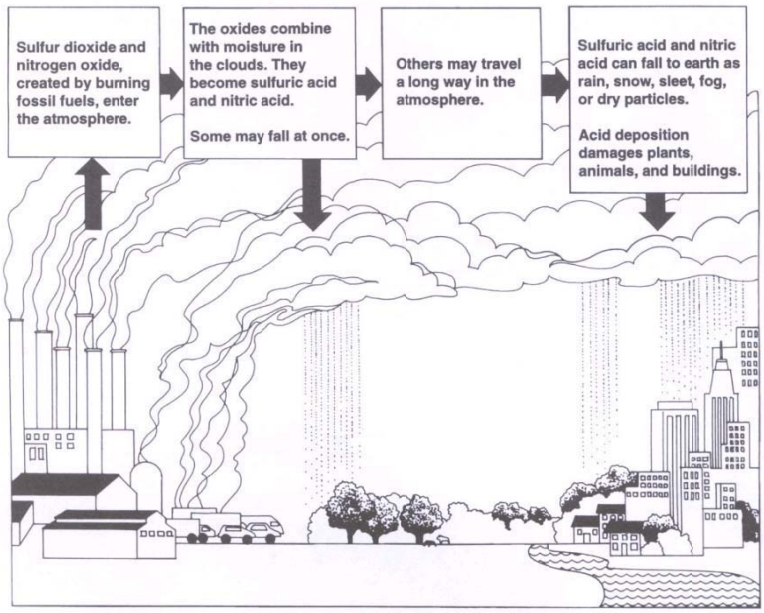


What are the Effects of Global Warming likely to be? (Positive and Negative)
No one is really sure how global warming will affect the planet but these points have been suggested(see maps above):-
Sea temperatures rise, the water would expand and **sea-level could rise by 0.25 to 1.5metres. Ice caps and glaciers melt** causing **sea levels to rise** even further. Low-lying areas would be flooded (eg much of Bangladesh near the coast would be at risk)
There might be more **violent storms** and **extremes** of hot weather, Hot regions would become hotter and **deserts might spread**. Climate belts and vegetation belts would shift towards the poles
Tropical diseases and insect pests may spread to more temperate areas
In Britain:-Maize, vines and even oranges could be grown in southern England
There could be **insufficient snow** in winter for the skiing industry in the Cairngorms (Scotland)
Sea defences would have to be raised and strengthened, especially in eastern England
Yields/area of cereals, potatoes, sugar beet and outdoor tomatoes would **increase**

What can be done to reduce global warming?
Nothing significant can be achieved without global cooperation but this has so far been difficult. Most greenhouse gases at present, are produced by MEDCs, especially the USA, but they claim that trying to do anything to cut greenhouse gases would be expensive and could lead to job losses. LEDCs are also reluctant to help to solve a problem that they did not create.
In 1997, the **Kyoto Protocol**, signed in Japan, brought agreement between countries that greenhouse gases should be reduced. So far, it has been difficult for the countries that signed to meet the targets although GB has committed itself to a large increase in wind power and other **renewables** over the next few decades
Renewable Energy – A power source that can be used sustainably (without running out), generally cleaner and less polluting. Examples include **Solar Panels, Wind Turbines, Bio-fuels, Wave power, Hydro-electric power and geothermal.**

Make sure you consider benefits and problems of these Renewables – eg visual and noise pollution from wind farms

Acid Rain – An issue of Global importance. This case study can be used in a number of areas, but generally looks at the causes, the effects on people and places and what can be done to prevent / reduce it.



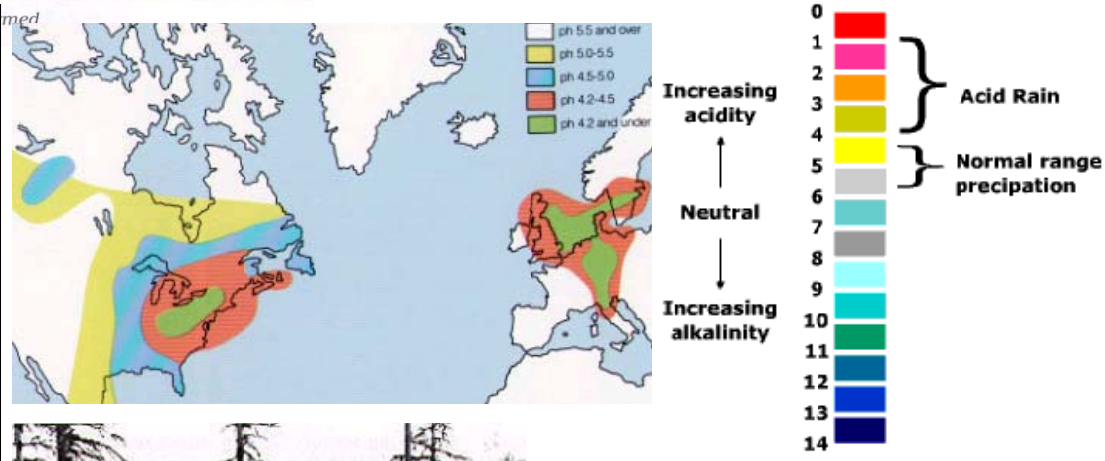
What is Acid Rain?

Acid rain is a term used to describe rainfall that has a higher than normal acid level. As shown on the Graph (below) all rain is slightly acidic, but as the map shows many places are now seeing record pH levels well above average.

What are the Causes of Acid Rain?

Acid rain is a type of air pollution mainly caused by power stations and industries burning fossil fuels which give off Sulphur Dioxide and Nitrogen Oxide. Car exhausts also add to the problem See diagram (left)

Why is acid rain a concern?
Acid rain is an **international problem** because it is blow across oceans and continents across political boundaries. The map shows countries that produce acid rain. Some, like UK, USA and Germany 'export' acid rain while other countries 'import' it. This makes solutions to the problem difficult to agree on as those that suffer the effects are not the one that cause them.



Acid rain withers trees in a coniferous forest in Europe.
Photo by The Ministry of Foreign Affairs of Japan

What are the consequences of Acid Rain?
Aquatic life (animals that live in water) will suffer. Acidified lakes and rivers will cause **fish** gills to become full of mucus and stop working causing death. **Plant life** here will also be poisoned by acid.

Stonework of buildings will be dissolved by the acid, especially if the building is made of stone such as Limestone (see pic of statue).

Forests are killed as acid attacks the leaves and photosynthesis slows down, and branches are thin and die off. Seedlings fail to grow. Roots are damaged and nutrients are washed out of the soil.

How can we reduce Acid Rain?
Short term solutions include spraying trees lakes and rivers with Limestone, as it is alkaline and helps to neutralise the acid. This is only TEMPORARY.

Long term solutions can be achieved in a number of ways, such as
Burning less fossil fuels and conserving energy to reduce sulphur in the atmosphere.
Use **renewable fuels** such as wind or solar energy.
Remove sulphur from gases using limestone scrubbers in chimneys to stop sulphur getting into the atmosphere.
Reduce **emissions from cars** by using unleaded petrol and low sulphur diesel.

Trade – the exporting and importing of goods.

MEDCs mainly export manufactured goods and account for the largest amount of world trade.
LEDCs have a small range of exports mainly raw materials and agricultural products.

Costa Rica (LEDC) – South America (approx 14 – 26mins GCSE Bitesize)
How are LEDCs affected by trade with MEDCs?
Trade –
Import –
Export –
Trade Deficit –
Trade surplus -

1. How have MEDCs affected the economy of Costa Rica?	
2. How have MEDCs affected the environment of Costa Rica?	
3. How have MEDCs affected the people of Costa Rica?	
4. What disadvantages have LEDCs had when trading with MEDCs?	
5. How has Costa Rica tried to deal with the above problems?	

Other notes:

Aid – the giving of help to improve Quality of Life.

Short term aid – emergency relief for instance after a natural disaster such as an earthquake.

Long term aid – given to aid development over time.

Somalia – Africa

1. Name and explain the three types of aid.	a) Gift b) c)
2. Explain the three ways in which aid is given.	a) Bilateral aid b) Multilateral aid c) Multilateral aid from NGOs.
3. Where does the aid given to Somalia come from?	
4. What different types of aid have been given to Somalia?	
5. What are the benefits and drawbacks of these types of aid?	

Other notes:

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

Ecosystems – Watch the DVD that describes rainforest ecosystems and their use.

Answer the questions below using either, Costa Rica and Ghana from the video or your knowledge about rainforests using the case study booklet.

1) Describe the location and climate of the rainforests. Why are they found here?	
2) Describe the structure and plants found in the rainforest	Ground Layer – Shrub Layer – Under Canopy – Upper Canopy – Emergent Layer –
3) What types of adaptations do plants and animals have to help them survive?	
4) How do people use the rainforest **SUSTAINABLY**?	
5) How do people use the rainforest **UNSUSTAINABLY**?	

CASE STUDY: The effects of people on an ecosystem.

(i) Name and locate an ecosystem you have studied.

(ii) Describe the structure of the ecosystem. Refer to plants and animals. Draw diagrams if you wish.

(iii) Explain how and why people are changing (or have changed) the ecosystem structure.

CASE STUDY: An ecosystem that is being used in an unsustainable way.

(i) Name a place where you have studied an ecosystem that is being used in an unsustainable way by people **or** organisations.

(ii) Name the type of ecosystem you have studied.

(iii) Describe how people **or** organisations are using this ecosystem.

(iv) Explain why this makes the ecosystem **unsustainable**.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.
<u>Global Warming – An Issue of Global Importance</u> – Watch the video clips that describe Global Warming, some of its causes, hazards and solutions.

Answer the questions below using either, your own notes in your book, notes from the video, the revision booklet.

1) What is Global Warming?	
2) What are the causes of Global Warming?	
3) Why is Global Warming an international concern?	
4) What are the consequences of Global Warming? (**Environmental** and **Human**)	
5) What are the solutions to the Global Warming problem? Are they successful?	

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Global Warming.
(ii) Describe the causes.
(iii) Explain how the issue affects different groups of people and/or organisations.

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Global Warming.
(ii) Describe the causes.
(iii) Explain how the issue affects people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions.

ACID RAIN – An Issue of Global Importance – Watch the video clips that describe acid rain, some of its causes, hazards and solutions.

Answer the questions below using either, your own notes in your book, notes from the video, the revision booklet.

1) What is Acid Rain?	
2) What are the causes of Acid Rain?	
3) Why is Acid rain an international concern?	
4) What are the consequences of Acid Rain? (**Environmental** and **Human**)	
5) What are the solutions to the Acid Rain problem? Are they successful?	

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Acid Rain.
(ii) Describe the causes.
(iii) Explain how the issue affects different groups of people and/or organisations.

CASE STUDY: An issue of global importance.
(i) Name and locate an area that has been affected by Acid Rain.
(ii) Describe the causes.
(iii) Explain how the issue affects people and the environment.

Answer the 5 key questions below. These build in to the knowledge you need to attempt case study questions on (Sustainable) Development – Answer the questions below using the information from the documentary on palm oil about ecosystem, and the way it is exploited.

1) a) What is the issue? What is happening, and where? b) What is the role of the MEDC's and Multinationals? DESCRIBE	
2) How are different groups of people affected? (Positive and Negative)	
3) What are the impacts on the environment? (Flora and Fauna)	
4) What are the economic impacts? (Benefits and Problems)	
5) Is this a sustainable use of resources? EXPLAIN your answer.	

CASE STUDY: Managing the use of ecosystems.
(i) Name and locate an ecosystem you have studied.
(ii) Describe how people are trying to use this ecosystem.
(iii) Explain how the management of this ecosystem is affecting people and the environment.

CASE STUDY: Managing the use of ecosystems.
(i) Name and locate an ecosystem you have studied.
(ii) Describe how people are trying to manage the use of this ecosystem.
(iii) **Explain** what makes the use of this ecosystem **unsustainable**.